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BESCK104E

First Semester B.E/B.Tech. Degree Examination, June/July 2025
Introduction C Programming

Time: 3 hrs. Max. Marks:100

Note: *1. Answer any FIVE full questions, choosing ONE full question from each module.*
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
1	a.	Discuss classification and application of computers.	6	L1	CO1
	b.	Explain structure of C program with example.	7	L2	CO2
	c.	Write a program to find the largest of three numbers.	7	L3	CO2
		OR			
2	a.	Discuss the types of input and output devices used in computers.	6	L1	CO1
	b.	Explain printf( ) and scanf( ) functions of C with examples.	8	L2	CO2
	c.	Write a program to calculate the grade for students with your sample grades.	6	L3	CO2
		Module – 2			
3	a.	Explain operator precedence and associativity with examples.	6	L2	CO2
	b.	Write a program to calculate average of given numbers using for loops.	6	L3	CO2
	c.	Explain looping statements in C language with syntax and example.	8	L2	CO2
		OR			
4	a.	Discuss if and switch statement syntax in C language and give examples.	10	L2	CO2
	b.	Explain the usage of break, continue and go-to statements in C language with examples.	10	L2	CO2
		Module – 3			
5	a.	Explain function definition, function calls, function declaration. Give suitable examples.	6	L2	CO5
	b.	Explain implementation of recursive functions with complete C program.	6	L3	CO5
	c.	Discuss call by value and call by reference in parameter passing with suitable illustrations.	8	L2	CO5
		OR			
6	a.	Explain declaration and initialization of one dimensional array with examples.	10	L3	CO5
	b.	Implement matrix multiplication and validate the rules of multiplication of matrix.	10	L2	CO3
		Module – 4			
7	a.	Explain declaration and initialization of two dimensional array with example.	10	L2	CO3
	b.	Write a C program to sort the given N numbers using the bubble sort algorithm.	10	L3	CO3

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		OR			
8	a.	Explain the declaration, initialization of strings in C and arrays of strings with examples.	**10**	**L2**	**CO4**
	b.	Implement structure to read, write and compute average marks of the students scoring. Display students scoring above and below the average marks for a class of N students.	**10**	**L4**	**CO4**
		Module – 5			
9	a.	Using suitable code, discuss the working of the following string functions : (i) Strcat( ) (ii) Strlen( ) (iii) Strcmp( )	**6**	**L2**	**CO4**
	b.	Write a program to transpose the elements of a 3×3 matrix.	**8**	**L3**	**CO3**
	c.	Implement a structure of student with elements NAME, USN and GRADE. Write functions to read and display student structure.	**6**	**L4**	**CO4**
		OR			
10	a.	Explain structures with syntax and example.	**6**	**L2**	**CO4**
	b.	Develop a program using pointers to compute the sum, mean and standard deviation of all elements stored in an array of N real numbers.	**7**	**L4**	**CO4**
	c.	Explain the passing of pointer variables to a function with examples.	**7**	**L2**	**CO4**

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BPOPS103/203

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Principles of Programming using C

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the components of a computer with a neat diagram.	06	L2	CO1
	b.	Explain the formatted input and output statements with suitable syntax and example.	06	L2	CO2
	c.	Illustrate an algorithm, flowchart and program to compute area of a circle.	08	L2	CO2
		OR			
Q.2	a.	What is variable? What are the rules to construct a variable?	06	L2	CO2
	b.	Identify the following as valid or invalid identifiers with justification: i) int ii) num2 iii) +add iv) a – 2 v) – sum vi) name _ _123	06	L2	CO2
	c.	Explain the structure of C program. Write a sample program to demonstrate the components in the structure of C program.	08	L2	CO2
		Module – 2			
Q.3	a.	Discuss the functioning of the following operators with example. i) Arithmetic ii) Relational	06	L2	CO2
	b.	Compare between the break and continue statement.	06	L2	CO2
	c.	Explain switch statement with syntax. Write a program to simulate simple calculator.	08	L2	CO2
		OR			
Q.4	a.	Explain for loop with syntax and example.	06	L2	CO2
	b.	Explain with syntax, if and if-else statements in C program.	06	L2	CO2
	c.	Develop a C program that takes three coefficients (a, b and c) of quadratic equation ($ax^2 + bx + c$) as input and compute all possible roots and print them with appropriate messages.	08	L3	CO5
		Module – 3			
Q.5	a.	Explain the syntax of function declaration and function definition with example.	06	L2	CO4
	b.	Write a C program to swap two integers using call by value method of passing arguments to a function.	06	L2	CO3
	c.	Explain different types of storage classes with example.	08	L2	CO3

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		OR			
Q.6	**a.**	Explain the declaration and initialization of 1D and 2D arrays with example.	**06**	**L2**	**CO3**
	b.	Illustrate the concept of recursive function with example.	**06**	**L2**	**CO4**
	c.	Write a C program to implement Bubble sort technique (ascending order).	**08**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	Write the operations that can be performed on string using built-in functions. Explain any two functions.	**08**	**L2**	**CO4**
	b.	Develop a C program to concatenate 2 strings without using built-in function.	**06**	**L3**	**CO5**
	c.	Explain array of strings with an example.	**06**	**L3**	**CO5**
		OR			
Q.8	**a.**	Develop a program using pointer to compute the sum, mean and standard deviation of all elements stored in array of N real numbers.	**08**	**L3**	**CO5**
	b.	Describe the pointer concept such as initialization, declaration with suitable program example.	**06**	**L3**	**CO3**
	c.	Explain gets( ) and puts( ) function with example.	**06**	**L2**	**CO1**
		Module – 5			
Q.9	**a.**	What is structure? Explain the C syntax of structure declaration with example.	**06**	**L2**	**CO3**
	b.	Compare structures and unions with syntax and example.	**06**	**L2**	**CO3**
	c.	Implement structures to read, write and compute average-marks of the students. List the students scoring above and below the average marks for a class of N students.	**08**	**L3**	**CO5**
		OR			
Q.10	**a.**	Discuss the different modes of operation on files with suitable example.	**08**	**L2**	**CO4**
	b.	Compare between fgets( ) and gets( ).	**06**	**L2**	**CO4**
	c.	Discuss the enumerated data type. Explain the declaration and access of enumerated data type with a code in C.	**06**	**L2**	**CO1**

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BESCK104C

First Semester B.E./B.Tech. Degree Examination, June/July 2025
Introduction to Electronics and Communication

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define the term rectifier. Explain the principle of working of full-wave bridge rectifier using a neat circuit diagram and waveforms.	7	L2	CO1
	b.	Discuss why negative feedback is used in amplifiers. Derive an expression for overall gain of an amplifier with negative feedback.	7	L2	CO1
	c.	A mains transformer having a turns ratio 44 : 1 is connected to a 220 V rms mains supply. If the secondary output is applied to a half wave rectifier, determine the peak voltage that will appear across a load.	6	L3	CO1
		OR			
Q.2	a.	With a block diagram explain the working of a d.c. power supply. Also mention the major components used in each block.	7	L2	CO1
	b.	Explain with circuit diagram, the working of, (i) Voltage doubler (ii) Voltage trippler systems.	7	L2	CO1
	c.	An amplifier produces an output voltage of 2V for an input of 50 mV. If the input and output currents in this condition are, respectively, 4 mA and 200 mA, determine : (i) Voltage gain (ii) Current gain (iii) Power gain.	6	L3	CO1
		Module – 2			
Q.3	a.	Draw the neat circuit diagram and accompanying waveforms of the following circuits using operational amplifier : (i) Voltage follower (ii) Differentiator (iii) Integrator	6	L1	CO2
	b.	Mention the conditions for sustained oscillations in an oscillator. Draw the circuit and provide the equations for output frequency of phase shift oscillator.	7	L2	CO2
	c.	With a neat circuit diagram and waveform, describe the operation of crystal controlled oscillator.	7	L2	CO2
		OR			
Q.4	a.	What is an operational amplifier? Write a note on ideal characteristics of op-amp.	7	L2	CO2

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	b.	Explain the operation of single stage astable oscillator with its circuit diagram.	7	L2	CO2
	c.	Determine the frequency of oscillations of a three stage ladder network in which C = 10 nF and R = 10 KΩ.	6	L3	CO2
		Module – 3			
Q.5	a.	Mention different theorems and postulates of Boolean algebra and prove each of them with truth table.	7	L2	CO3
	b.	With the help of truth table, explain the operation of half adder with its circuit diagram and expressions for sum and carry.	5	L2	CO3
	c.	(i) Minimize the function : $F(x, y, z) = xy + x'z + yz$ (ii) Find the complement of : $F_1(x, y, z) = x'yz' + x'y'z$ $F_2(x, y, z) = x(y'z' + yz')$ (iii) Compute the 1's complement of : $11101.0110_{(2)}$	8	L3	CO3
		OR			
Q.6	a.	With the help of truth table, explain the operation of full adder with its circuit diagram and expressions for sum and carry.	8	L2	CO3
	b.	State and prove De-Morgan's theorem with its truth table.	6	L2	CO3
	c.	Convert the following : (i) $(673.124)_{(8)} = (?)_{(16)}$ (ii) Subtract using (r – 1)'s compliment method : $72532_{(10)} - 3250_{(10)}$ (iii) Subtract using r's compliement method : $1010100_{(2)} - 1000100_{(2)}$	6	L3	CO3
		Module – 4			
Q.7	a.	What is an embedded system? Compare embedded systems and general purpose computing systems.	7	L2	CO4
	b.	Which component forms the core of an embedded system? Compare a microcontroller and a microprocessor used in an embedded system.	6	L2	CO4
	c.	Define the term transducer, with a representative diagram, explain the working of any one type of sensor and an actuator.	7	L2	CO4
		OR			
Q.8	a.	Write a brief note on a semiconductor LED. With a neat diagram explain how a 7-segment LED can be used to display the data.	7	L2	CO4
	b.	Using different features, describe the classification of embedded systems.	7	L2	CO4
	c.	With a block diagram, explain briefly about the different elements of an embedded system.	6	L2	CO4

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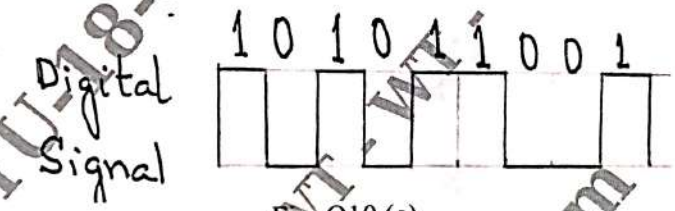
		Module – 5			
Q.9	a.	What is meant by modulation in communication systems? Briefly describe each type of modulation.	8	L2	CO5
	b.	Brief about basic communication system with its block diagram.	7	L2	CO5
	c.	Compare analog communication with digital communication systems.	5	L2	CO5
		OR			
Q.10	a.	Explain with a neat diagram, the concept of Radio Wave propagation and its different types.	7	L2	CO5
	b.	Describe about radio signal transmission and multiple access techniques.	7	L2	CO5
	c.	Consider the following binary data and sketch the ASK, FSK and PSK modulated waveforms.  Fig. Q10 (c)	6	L3	CO5

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BESCK204D

Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Introduction to Mechanical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain briefly the emerging trends of Mechanical engineering in manufacturing and energy sector.	10	L2	CO1
	b.	Write a note on : i) Global warming ii) Ozone layer depletion.	10	L2	CO1
		OR			
Q.2	a.	Explain the working of hydel power plant with a neat sketch.	10	L2	CO1
	b.	Explain with neat sketch, construction and working of a nuclear power plant.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain the working principle of Drilling Machine.	04	L2	CO2
	b.	Illustrate the following operations of milling with sketches: i) Plain milling ii) Slot milling	08	L3	CO2
	c.	With a neat sketch, explain the following operations performed on lathe machine: i) Turning ii) Facing	08	L2	CO2
		OR			
Q.4	a.	Describe the various components of CNC with schematic diagram.	10	L2	CO2
	b.	Define 3D printing. List the various steps involved in the 3D printing.	06	L2	CO2
	c.	List the advantages and applications of CNC.	04	L1	CO2
		Module – 3			
Q.5	a.	Analyze the working of the 4 stroke diesel engine with sketches. Plot the PV diagram.	12	L3	CO3
	b.	List the differences between 4 stroke petrol and diesel engine.	08	L1	CO3
		OR			
Q.6	a.	Describe electric vehicles. Explain the components and working of electric vehicles.	08	L2	CO3
	b.	Describe Hybrid Vehicles. Explain the components of Hybrid vehicles.	08	L2	CO3
	c.	List the advantages and limitations of electric vehicles.	04	L1	CO3

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		Module – 4			
Q.7	**a.**	Define engineering material. Briefly explain the classification of ferrous and non ferrous metals.	**10**	**L2**	**CO4**
	b.	Describe the following materials: i) Ceramics ii) Shape memory alloys iii) Glass iv) Diamond	**10**	**L2**	**CO4**
		OR			
Q.8	**a.**	List the differences between soldering, brazing and welding.	**10**	**L1**	**CO4**
	b.	Describe the construction and working of gas welding process with neat sketch.	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Enumerate the differences between open loop and closed loop systems.	**06**	**L1**	**CO5**
	b.	Based on the configuration explain different types of robots with sketches.	**10**	**L2**	**CO5**
	c.	Explain the physical design of IoT.	**04**	**L2**	**CO5**
		OR			
Q.10	**a.**	Define automation. Explain the three types of automation.	**10**	**L2**	**CO5**
	b.	Define IoT. List the characteristics of IoT.	**10**	**L1**	**CO5**

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BETCK105I

First Semester B.E/B.Tech. Degree Examination, June/July 2025
Introduction to Cyber Security

Time: 3 hrs. Max. Marks:100

Note: *1. Answer any FIVE full questions, choosing ONE full question from each module.*
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
1	a.	Discuss the classification of cyber crime. Explain the different types of cyber crime towards an individual and property.	10	L2	CO1
	b.	Explain the Botnet Menace with diagram.	6	L2	CO2
	c.	Elaborate two types of Attacks in cyber security.	4	L2	CO1
		OR			
2	a.	Discuss the purpose of hacking. Explain hacking with examples.	10	L2	CO2
	b.	Explain Spamming. Mention its types.	6	L2	CO2
	c.	Who are Cybercriminals? Explain its types.	4	L2	CO2
		Module – 2			
3	a.	What is Cyber-stalking? Discuss how it is a crime under Indian IT Act.	8	L3	CO1
	b.	How cybercafés are creating paths for cybercrimes.	6	L4	CO2
	c.	Discuss the four different hat concept in cyber security.	6	L2	CO2
		OR			
4	a.	What is social engineering? Explain with example. Also discuss dumpster diving and shoulder surfing concepts in social engineering.	10	L2	CO1
	b.	Explain how Botnets can be used as fuel to cyber crime. With neat diagram, discuss Botnet uses for gainful purpose.	6	L2	CO2
	c.	Explain the real-life incident of cyber stalking example.	4	L2	CO2
		Module – 3			
5	a.	What are the different ways of password cracking methods?	10	L1	CO3
	b.	List and discuss the classification of DoSattack.	6	L1	CO3
	c.	Discuss the difference between Trozen Horses and Backdoors.	4	L2	CO3
		OR			
6	a.	Explain the following : i) Software keyloggers ii) Hardware keylogger iii) Anti keylogger iv) Spywares.	10	L2	CO3
	b.	Discuss the proxy server and Anonymizers in the cyber security.	6	L2	CO3
	c.	Differentiate between virus and worm.	4	L3	CO3
		Module – 4			
7	a.	Discuss the various types of phishing scams [Any five].	10	L2	CO4
	b.	Explain the different types of identity theft [any five].	10	L2	CO4

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		OR			
8	a.	Discuss the various techniques used by phishers to launch phishing attacks.	**10**	**L2**	**CO4**
	b.	What is spear phishing? Explain with example.	**5**	**L1**	**CO4**
	c.	Explain how to prevent being a victim of identify theft in cyber security.	**5**	**L4**	**CO4**
		Module – 5			
9	a.	Discuss the following phases of Forensics life cycles : i) Preparation and identification ii) Collection and recording.	**10**	**L2**	**CO5**
	b.	Differentiate between Forensic policy and Security policy.	**6**	**L2**	**CO5**
	c.	Briefly explain RFC2822.	**4**	**L1**	**CO5**
		OR			
10	a.	Discuss the following phases of forensics life cycles: i) Storing and transporting ii) Examination / Investigation iii) Analysis interpretation and attribution.	**10**	**L2**	**CO5**
	b.	Discuss the need for concept of Computer Forcusics.	**6**	**L2**	**CO5**
	c.	Briefly explain wireless Forensics.	**4**	**L1**	**CO5**

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BBEE103/203

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Basic Electronics for EEE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. Assume any missing data suitably.

		Module – 1	M	L	C
Q.1	a.	Explain the forward and reverse characteristics of semiconductor diode.	08	L2	CO1
	b.	Explain positive half wave rectifier with input and output waveforms.	06	L2	CO1
	c.	Explain Zener diode of voltage regulator with no load.	06	L2	CO1
		OR			
Q.2	a.	Explain RC π filter.	08	L2	CO1
	b.	What is DC load line? Explain DC load line analysis for semiconductor diode.	08	L2	CO1
	c.	Write down the characteristics of Zener diode.	04	L2	CO1
		Module – 2			
Q.3	a.	Explain BJT current amplification for increasing and decreasing IB level.	08	L2	CO2
	b.	Explain common base input characteristics of BJT.	06	L2	CO2
	c.	With a neat diagram explain the working of n channel JFET.	06	L2	CO2
		OR			
Q.4	a.	Explain the operation of enhancement MOSFET.	08	L2	CO2
	b.	Draw the DC load line for transistor and identify Q points.	08	L2	CO2
	c.	Describe common emitter input characteristics.	04	L2	CO2
		Module – 3			
Q.5	a.	With a neat block diagrams explain the typical op-Amp.	06	L2	CO3
	b.	Explain working of a differential amplifier.	08	L2	CO3
	c.	Explain op-Amp of an integrator circuit with an input and output waveform using square wave of input.	06	L2	CO3
		OR			
Q.6	a.	Explain Differentiator with waveform and circuit.	08	L2	CO3
	b.	Define Op-amp parameters Gain, CMRR, Flew rate, input resistance.	08	L2	CO3
	c.	Explain inverting amplifier.	04	L2	CO3

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		Module – 4			
Q.7	**a.**	Express the Boolean function F = A + BC in a sum of minterms.	**06**	**L2**	**CO4**
	b.	Describe how NAND and NOR gates can be used as universal gates.	**08**	**L2**	**CO4**
	c.	Write down Axiomatic definition of Boolean algebra.	**06**	**L2**	**CO4**
		OR			
Q.8	**a.**	Describe the working of the full adder using basic gates.	**08**	**L2**	**CO4**
	b.	Explain SOP and POS with examples.	**06**	**L3**	**CO4**
	c.	Express the Boolean function $F = XY + \overline{X}Z$ in a product of max term.	**06**	**L2**	**CO1**
		Module – 5			
Q.9	**a.**	Explain the working of the potentiometer type transducer.	**08**	**L2**	**CO5**
	b.	Write a note on Photodiodes.	**06**	**L2**	**CO5**
	c.	Illustrate the piezoelectric transducer.	**06**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain typical Radio Transmitter with neat block diagram.	**08**	**L2**	**CO5**
	b.	What is modulation? Explain the need for modulation.	**06**	**L2**	**CO5**
	c.	Explain the working of linear variable differential transducer.	**06**	**L2**	**CO5**

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BPLCK205B

Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Introduction to Python Programming

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the print( ), input( ) and string concatenation with examples.	06	L2	CO1
	b.	Explain the scope of local and global variables with suitable example.	06	L2	CO1
	c.	Develop a python program to calculate the area and circumference of a circle, input the value of radius and print the result.	08	L3	CO1
		OR			
Q.2	a.	Explain the exception handling mechanism in python. Write a program to solve divide by zero exception.	06	L2	CO1
	b.	Define user defined function. How to pass parameters in functions? Explain with an example.	06	L2	CO1
	c.	Develop a program to generate Fibonacci series of length N. Read the value of N from console.	08	L3	CO1
		Module – 2			
Q.3	a.	Explain the following methods with example: i) index( ) ii) append( ) iii) extend( ) iv) remove( ) v) insert( ) vi) sort( )	06	L2	CO2
	b.	Explain the use of "in" and "not in" operators with suitable examples.	06	L2	CO2
	c.	Develop a program to compute and print mean, variance and standard deviation.	08	L3	CO2
		OR			
Q.4	a.	Define tuple data type. List the differences between tuple and list.	06	L2	CO2
	b.	Explain the following dictionary methods with suitable example: i) keys( ) ii) values( ) iii) items( ) iv) setdefault( )	08	L2	CO2
	c.	Develop a python program to swap two numbers without using intermediate variable.	06	L3	CO2
		Module – 3			
Q.5	a.	Explain the following methods with suitable examples: i) upper( ) ii) isupper( ) iii) lower( ) iv) islower.	08	L2	CO3
	b.	Explain the concept of file handling. Also discuss absolute and relative file path.	06	L2	CO3
	c.	Develop a python program to check whether the given string a palindrome or not palindrome.	06	L3	CO3

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		OR			
Q.6	**a.**	Explain the join( ) and Split( ) methods with suitable examples.	**06**	**L2**	**CO3**
	b.	Explain the following methods with examples: i) isalpha( ) ii) isanum( ) iii) isSpace( )	**06**	**L2**	**CO3**
	c.	Illustrate with an example the process of reading from and writing to a file in python.	**08**	**L3**	**CO3**
		Module – 4			
Q.7	**a.**	Explain the following file operations in python with suitable example: i) Copying files and folders ii) Moving files and folders iii) Deleting files and folders	**06**	**L2**	**CO3**
	b.	What are Assertations? Explain the contents of assert statement with examples.	**08**	**L2**	**CO3**
	c.	Illustrate with an example the concept of walking a directory tree.	**06**	**L2**	**CO1**
		OR			
Q.8	**a.**	Illustrate the logging levels in python.	**06**	**L2**	**CO3**
	b.	List out the differences between Shutil.copy( ) and Shutil.copytree( ) methods.	**06**	**L2**	**CO3**
	c.	Develop a program with a function named DivExp which takes two parameters a and b and returns c (c = a/b). Write suitable assertation for a > 0 in function DivExp and raise an exception for when b = 0. Develop a python program which reads two values from the console and calls a function DivExp.	**08**	**L3**	**CO3**
		Module – 5			
Q.9	**a.**	Define classes and objects in python. Construct a class called rectangle and initialize it with height = 100, width = 200, starting point as (x = 0, y = 0) and write the method to display the center point coordinates of a rectangle.	**08**	**L2**	**CO4**
	b.	Explain __init( )__ and __str( )__ methods with examples.	**06**	**L2**	**CO4**
	c.	Define pure function. Explain the same with an example.	**06**	**L2**	**CO4**
		OR			
Q.10	**a.**	Define a function which takes two objects representing complex numbers and returns a new complex number with a addition of two complex numbers. Define a class 'complex' to represent the complex number. Develop a python program to read N(N >= 2) complex numbers and to compute the addition of N complex numbers.	**08**	**L2**	**CO4**
	b.	Explain the printing of objects with an example.	**06**	**L2**	**CO4**
	c.	Explain the concept of inheritance with an example.	**06**	**L2**	**CO4**

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CBCS SCHEME

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BPHYS102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Applied Physics for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Discuss the three processes of interaction of radiation with matter along with relevant mathematical expressions and diagrams.	09	L2	CO1
	b.	Define attenuation and give expression for attenuation coefficient in an optical fiber. Explain the three major causes of attenuation.	07	L2	CO1
	c.	In a diffraction grating experiment, the laser light undergoes third order diffraction with diffraction angle 2.2°. The grating constant is $d = 5.05\times10^{-5}$ m. The distance between the grating and source is 0.8 m. Find the wavelength of laser.	04	L3	CO5
		OR			
Q.2	a.	Define acceptance angle and numerical aperture. Hence, derive an expression for NA in terms of RIs of core, cladding and surrounding.	08	L2	CO1
	b.	Discuss the application of laser in bar-code scanner and laser printer with the help of relevant diagrams.	08	L2	CO1
	c.	Given the Numerical aperture 0.30 and RI of core 1.52, calculate the R.I of clad.	04	L3	CO1
		Module – 2			
Q.3	a.	Derive the expression for deBroglie wavelength by analogy and explain Heisenberg uncertainty principle with relevant mathematical expressions.	08	L2	CO2
	b.	Discuss eigen wavefunction, probability function for a particle in an infinite potential well for the ground state and 1st excited state with neat relevant diagram.	08	L2	CO2
	c.	Calculate the energy of first three states for an electron in a one dimensional potential well of width 0.2 nm.	04	L3	CO2
		OR			
Q.4	a.	Set up Schrodinger's time-independent differential wave equation. Mention the expression for 3 dimensional version of the same.	08	L2	CO2
	b.	Write note on : i) Wave function ii) Max Born interpretation iii) Principle of complementarity	08	L2	CO2
	c.	The speed of an electron is measured to within an uncertainty of 3×10^{4} ms^{-1} in one dimension. What is the minimum width required by the electron to be confined in an atom?	04	L3	CO2
		Module – 3			
Q.5	a.	Discuss (i) Quantum NOT gate (ii) CNOT gate with matrix representation and their operation on the basis states.	08	L2	CO2

Q.5	b.	Define qubit and mention three properties. Explain the representation of qubit using Bloch sphere.	08	L2	CO2
	c.	Given $\|\psi\rangle = \begin{bmatrix}\alpha_1\\ \alpha_2\end{bmatrix}$ and $\|\phi\rangle = \begin{bmatrix}\beta_1\\ \beta_2\end{bmatrix}$, prove that $\langle\psi\|\phi\rangle = \langle\phi\|\psi\rangle^*$	04	L3	CO2
		OR			
Q.6	a.	Explain the operation of (i) Hadamard gate and (ii) Toffoli gate with matrix representation and truth table.	08	L2	CO2
	b.	Explain orthogonality and orthonormality with an example for each.	08	L2	CO2
	c.	Show that the matrix $A = \begin{bmatrix} i & 0 & 0\\ 0 & i & 0\\ 0 & 0 & i\end{bmatrix}$ is unitary.	04	L3	CO2
		Module – 4			
Q.7	a.	Mention 3 failures of CFET and the assumptions of QFET.	07	L2	CO3
	b.	Write short notes on (i) quantum tunnelling (ii) squid (iii) charge qubit (iv) Josephson junction.	08	L2	CO3
	c.	Calculate the probability of occupation of an energy level 0.02 eV above Fermi level at 300 K.	05	L3	CO3
		OR			
Q.8	a.	Define Fermi factor. Discuss the variation of Fermi factor with temperature and energy. Represent the same using graph.	08	L2	CO3
	b.	With relevant diagrams, explain Type-1 (Soft) and type-2(Hard) superconductors with two examples for each.	08	L2	CO3
	c.	Superconducting aluminium has critical temperature of 1.2 K at zero magnetic field. If the critical field is 0.01 Tesla at 0 K, find its critical field at 0.5 K.	04	L3	CO3
		Module – 5			
Q.9	a.	Illustrate odd rule and odd rule multipliers with suitable example for slow-in and slow-out.	08	L2	CO4
	b.	Mention the general pattern of Monte Carlo method and hence determine the value of π.	08	L2	CO4
	c.	Given the base distance 0.5 cm for the slow-in and given the last frame is 6^{th}, calculate the distance between the frames #3 and #4.	04	L3	CO4
		OR			
Q.10	a.	Distinguish between descriptive and inferential statistics.	08	L2	CO4
	b.	In the context of animation, describe the action of jump with measurable physical quantities and relations between them.	08	L2	CO4
	c.	The average number of internet failures in a household per week is 3. What is the probability of 4 internet failures happening next week assuming Poisson model?	04	L3	CO4

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CBCS SCHEME

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BPHYE102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Applied Physics for EEE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. *Answer any FIVE full questions, choosing ONE full question from each module.*
2. *M : Marks , L: Bloom's level , C: Course outcomes.*
3. *VTU Hand Book is permitted.*

		Module – 1	M	L	C
Q.1	a.	State and explain Heisenberg's uncertainty principle show that the electron cannot exist inside the nuclear.	8	L2	CO1
	b.	Setup time independent Schrodinger wave equation for free particle in one dimension.	8	L2	CO1
	c.	Calculate the momentum of an electron and de-Broglie wavelength associated with it if its kinetic energy is 1.5 KeV.	4	L3	CO1
		OR			
Q.2	a.	What is wave function? Give its physical significance and properties.	8	L2	CO1
	b.	Assuming the time independent Schrodinger's wave equation, discuss the solution for a particle in one dimensional potential well of infinite height and hence obtain the normalized wave function.	8	L2	CO1
	c.	Calculate the energy in eV for the first two permitted excited state of an electron in an infinite potential well of width 2Å.	4	L3	CO1
		Module – 2			
Q.3	a.	What is Fermi's energy? Describe the dependence of Fermi factor on temperature and energy.	8	L2	CO2
	b.	Define internal field. Derive the Clausius – Mossotti equation.	8	L2	CO2
	c.	The Superconducting transition temperature of lead of 7.26 K. The initial field at 0 K is 64×10^3 Amp/m. Calculate the critical field at 5K.	4	L3	CO2
		OR			
Q.4	a.	What is Polarization? Describe various types of polarization mechanisms.	8	L2	CO2
	b.	What is Superconductivity? Explain the types of superconductors.	8	L2	CO2
	c.	What is the polarization produced in sodium chloride by an electric field of 600 V/mm, given that its dielectric constant is 6 ?	4	L3	CO2
		Module – 3			
Q.5	a.	Derive an expression for the radiant energy density under thermal equilibrium using Einstein's co-efficient.	8	L2	CO1
	b.	Define modes of propagation and V-number. Obtain the expression for the numerical aperture of an optical fiber.	8	L2	CO1

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	c.	Find the ratio of population of the two energy states in a material that produces light of wavelength 6328 Å at 27°C.	4	L3	CO1
		OR			
Q.6	a.	Explain the construction and working of carbon dioxide laser. Mention any two applications of it.	8	L2	CO1
	b.	What is Refractive index profile? Describe three types of optical fiber with one application for each type.	8	L2	CO1
	c.	Find the attenuation in an optical fiber of length 500 m when a light signal of power 100 mW emerges out of the fiber with a power 90 mW.	4	L3	CO1
		Module – 4			
Q.7	a.	Describe the vector operator ∇ and explain the concepts of divergence, gradient and curl.	8	L2	CO3
	b.	What is displacement current? Derive an expression for displacement current.	8	L2	CO3
	c.	Determine the resonance frequency of an LCR series circuit with inductance = 0.5 henry, capacitance = 0.45, microfarad and resistance = 300Ω	4	L2	CO3
		OR			
Q.8	a.	State and prove Gauss divergence theorem. Mention four Maxwell's equations in differential form for time varying fields.	8	L2	CO3
	b.	Derive the wave equation interms of electric field using Maxwell's equation in free space.	8	L2	CO3
	c.	Find the wavelength of the semiconductor laser in diffraction grating experiment where the angle of diffraction for the first order is 0.75 degree. Given grating constant = $4.7 \times 10^{-5} m^{-1}$.	4	L3	CO5
		Module – 5			
Q.9	a.	Show that the Fermi level of an intrinsic semiconductor lies in the mid – part of the forbidden energy gap. Discuss the law of mass action.	8	L2	CO4
	b.	Derive an expression for electrical conductivity of an intrinsic semiconductor.	8	L2	CO4
	c.	The Hall co-efficient of a speciman of a dopped silicon is found to be 3.66×10^{-4} m^3/C. What is the type of charge carriers? Also calculate the carrier concentration.	4	L3	CO4
		OR			
Q.10	a.	What is Hall effect? Obtain the expression for Hall voltage and express Hall voltage interms of Hall coefficient.	8	L2	CO4
	b.	Explain construction and working of semiconductor diode laser with the help of energy Band diagram and mention any two applications of it.	8	L2	CO4
	c.	The resistivity of intrinsic germanium at 27°C is equal to 0.449 ohm-meter. Assuming electron and hole mobilites as 0.39 m^2/Volt-Sec and 0.19m^2/Volt-Sec respectively. Calculate the intrinsic carrier density.	4	L3	CO4

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BCHES102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Applied Chemistry for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What are electrochemical sensors? Explain its application in the measurement of dissolved oxygen.	07	L2	CO1
	b.	Describe the construction, working and applications of lithium ion battery.	07	L2	CO1
	c.	Explain the working principle of conductometric sensors.	06	L2	CO1
		OR			
Q.2	a.	Describe the application of electrochemical gas sensors for SO_x and NO_x.	07	L2	CO1
	b.	Describe the construction, working and applications of sodium ion battery.	07	L2	CO1
	c.	Explain the working principle of optical sensors.	06	L2	CO1
		Module – 2			
Q.3	a.	What are memory devices? Explain the classification of electronic memory devices with an example.	07	L2	CO2
	b.	Mention any four properties and applications of LCD.	07	L2	CO2
	c.	Mention any four properties and applications of QLED.	06	L2	CO2
		OR			
Q.4	a.	What are nano materials? Explain any four properties of polythiophenes (P_3HT) suitable for optoelectronic devices.	07	L2	CO2
	b.	Mention any four properties and applications of OLED.	07	L2	CO2
	c.	What are photoactive and electroactive materials.	06	L2	CO3
		Module – 3			
Q.5	a.	What is corrosion? Explain the electrochemical theory of corrosion with respect to iron.	07	L2	CO3
	b.	What is a cathodic protection? Explain sacrificial anodic method.	07	L2	CO3
	c.	What are concentration cells? Explain with an example.	06	L2	CO3

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		OR			
Q.6	**a.**	What are reference electrodes? Explain the construction, working and applications of calomel electrode.	**07**	**L2**	**CO3**
	b.	Draw the nature of conductometric graph for the estimation of weak acid versus strong base and explain the nature of graph.	**07**	**L2**	**CO3**
	c.	Calculate the cell potential of the following concentration cell and comment on the spontaneity of the reaction $Cu \mid Cu^{2+}$ (0.01 M) $\parallel Cu^{2+}$ (0.015 M) $\mid Cu$	**06**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	What is number average and weight average molecular weight of polymer?	**07**	**L2**	**CO4**
	b.	What are conducting polymers? Explain the mechanism of conduction in polyacetylene.	**07**	**L2**	**CO4**
	c.	Explain the construction and working of photovoltaic cells.	**06**	**L2**	**CO4**
		OR			
Q.8	**a.**	Explain the preparation, properties and commercial applications of Kevlar.	**07**	**L2**	**CO4**
	b.	Explain the generation of energy (green hydrogen) by electrolysis of water and its advantages.	**06**	**L2**	**CO4**
	c.	Polymer sample contains six molecules having molecular weight of 1000 mol/kg. Five molecules having molecular weight of 2000 mol/kg and four molecules having molecular weight of 3000 mol/kg. Calculate number average and weight average molecular weight of polymer.	**07**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	Explain the characteristics and need of e-waste management.	**07**	**L2**	**CO5**
	b.	Explain the extraction of gold from e-waste.	**07**	**L2**	**CO5**
	c.	Explain the role of stake holders in environmental management of e-waste.	**06**	**L2**	**CO5**
		OR			
Q.10	**a.**	What is e-waste? Mention the sources and composition of e-waste.	**07**	**L2**	**CO5**
	b.	Explain any two different techniques used to recycling and recovery of e-waste.	**07**	**L2**	**CO5**
	c.	Mention any three toxic materials used in the manufacturing electronic products and electrical products and mention their health hazards.	**06**	**L2**	**CO5**

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BMATS201

Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Mathematics – II for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Evaluate $\int_{-1}^{1}\int_{0}^{z}\int_{x-z}^{x+z}(x+y+z)\,dy\,dx\,dz$	07	L3	CO1
	b.	Evaluate $\int_{0}^{\infty}\int_{x}^{\infty}\frac{e^{-y}}{y}\,dy\,dx$ by changing the order of integration.	07	L3	CO1
	c.	Show that $\beta(m,n)=\frac{\Gamma(m).\Gamma(n)}{\Gamma(m+n)}$	06	L2	CO1
		OR			
Q.2	a.	Evaluate $\int_{0}^{1}\int_{0}^{\sqrt{1-y^2}}(x^2+y^2)\,dy\,dx$ by changing to polar coordinates.	07	L3	CO1
	b.	Using double integration find the area of a plate in the form of a quadrant of the ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$	07	L3	CO1
	c.	Using mathematical tools, write the code to find the volume of the tetrahedron bounded by the planes $x = 0$, $y = 0$, $z = 0$ and $6x + 3y + 2z = 6$.	06	L3	CO5
		Module – 2			
Q.3	a.	Find the angle between the surfaces $x^2 + y^2 + z^2 = 9$ and $z = x^2 + y^2 - 3$ at the point $(2, -1, 2)$.	07	L2	CO2
	b.	Evaluate $\text{div}\,\vec{F}$ and $\text{curl}\,\vec{F}$ at the point $(1, 2, 3)$, given $\vec{F} = \text{grad}(x^3y + y^3z + z^3x - x^2y^2z^2)$	07	L3	CO2
	c.	Express the vector $\vec{F} = 2x\,\hat{i} - 3y^2\,\hat{j} + zx\,\hat{k}$ in cylindrical form.	06	L3	CO2
		OR			
Q.4	a.	Find the directional derivative of $\phi(x, y, z) = x^2yz + yxz^2$ at $(1, -2, 1)$ in the direction of the vector $2\hat{i} - \hat{j} - 2\hat{k}$.	07	L2	CO2
	b.	Show that the vector $\vec{F} = \frac{x\,\hat{i} + y\,\hat{j}}{x^2 + y^2}$ is both solenoidal and irrotational.	07	L3	CO2
	c.	Using mathematical tool, write the code to find the gradient of $xy^3 + yz^3$.	06	L3	CO5

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Module – 3

Q.5	a.	Show that the set $W = \{(x, y, z) / x + y + 2z = 0\}$ of the vector space $V_3(R)$ is a subspace of $V_3(R)$.	07	L2	CO3
	b.	Find the basis and dimension of the subspace spanned by the vectors $\{(1, -1, 0), (0, 3, 1), (1, 2, 1), (2, 4, 2)\}$ in R^3.	07	L3	CO3
	c.	Find the matrix of the linear transformation $T : V_2(R) \to V_3(R)$ such that $T(-1, 1) = (-1, 0, 2)$ and $T(2, 1) = (1, 2, 1)$.	06	L2	CO3
		OR			
Q.6	a.	Determine whether the following set of vectors in 2×2 matrix space is linearly independent or linearly dependent: $S = \{v_1, v_2, v_3,\}$ where $v_1 = \begin{bmatrix} 2 & 1 \\ 0 & 1 \end{bmatrix}$, $v_2 = \begin{bmatrix} 3 & 0 \\ 2 & 1 \end{bmatrix}$ and $v_3 = \begin{bmatrix} 1 & 0 \\ 2 & 0 \end{bmatrix}$	07	L2	CO3
	b.	Prove that $T : R^3 \to R^2$ defined by $T(x, y, z) = (x + y, y + 2z)$ is a linear transformation.	07	L2	CO3
	c.	Verify the Rank – nullity theorem for the linear transformation $T : R^3 \to R^2$ defined by $T(x, y, z) = (y - x, y - z)$.	06	L2	CO3
		Module – 4			
Q.7	a.	Find a real root of the equation $x \log_{10} x = 1.2$ by regula falsi method corrected to 4 decimal places between (2.5, 3). Carry out 4 iterations.	07	L2	CO4
	b.	From the following table of half yearly premium for policies maturing at different ages, estimate the premium for the policies maturing at the age of 46.	07	L3	CO4
	c.	Use Trapezoidal rule to estimate the integration $\int_0^1 \frac{1}{1+x^2} dx$ by taking 10 equal intervals.	06	L3	CO4
		OR			
Q.8	a.	Find by Newton's Raphson method, the root of the equation $\cos x = x e^x$ near to 0.5, corrected to 4 decimal places.	07	L2	CO4
	b.	Using Newton's divided difference interpolation, find the interpolating polynomial of the given data:	07	L3	CO4
	c.	Evaluate using Simpson's $(1/3)^{rd}$ rule, $\int_4^{5.2} \log x \, dx$ by dividing the range (4, 5.2) into seven ordinates.	06	L3	CO4

Age :	45	50	55	60	65
Premium (in Rs.)	114.84	96.16	83.32	74.48	68.48

x :	- 4	- 1	0	2	5
f(x) :	1245	33	5	9	+1335

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Module – 5

Q.9	**a.**	Solve $y' = 3x + y^2$; $y(0) = 1$ using Taylor's series method at $x = 0.1$ and $x = 0.2$.	**07**	**L3**	**CO4**
	b.	Given $\frac{dy}{dx} = \frac{y-x}{y+x}$ with $y = 1$ when $x = 0$. Find an approximate y at $x = 0.1$ using Euler's modified method. (Use modified formula twice).	**07**	**L3**	**CO4**
	c.	From the data given below find y at $x = 1.4$ using Milne's method. Given $\frac{dy}{dx} = x^2 + \frac{y}{2}$.	**06**	**L3**	**CO4**

x :	1	1.1	1.2	1.3
y :	2	2.2156	2.4549	2.7514

OR

Q.10	**a.**	Using Runge – Kutta method of order 4, find y at $x = 0.2$, given $\frac{dy}{dx} = \frac{x^2+y^2}{10}$; $y(0) = 1$ taking $h = 0.1$.	**07**	**L3**	**CO4**
	b.	Using modified Euler's method solve $y' = 3x + \frac{y}{2}$ with $y(0) = 1$ taking $h = 0.2$ at $x = 0.2$. (Use modified Euler's formula twice).	**07**	**L3**	**CO4**
	c.	Using mathematical tools, write the code to solve $\frac{dy}{dx} = x^2y - 1$; $y(0) = 1$ by Taylor's series method at $x = 0.1\ (0.1)\ 0.3$	**06**	**L3**	**CO5**

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CBCS SCHEME

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BMATS101

First Semester B.E./B.Tech. Degree Examination, June/July 2025
Mathematics – I for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With usual notation prove that $\tan\phi = r\frac{d\theta}{dr}$	06	L2	CO1
	b.	Find the angle between the curves $r = \frac{a\theta}{1+\theta}$; $r = \frac{a}{1+\theta^2}$	07	L2	CO1
	c.	Find the radius of curvature for the curve $y^2 = \frac{a^2(a-x)}{x}$ where the curve meets the x-axis.	07	L2	CO1
		OR			
Q.2	a.	Show that the curves $r = a(1 + \cos\theta)$ and $r = a(1 - \cos\theta)$ cuts each other orthogonally.	08	L2	CO1
	b.	Find the pedal equation of the curve $\frac{\ell}{r} = 1 + e\cos\theta$	07	L2	CO1
	c.	Using modern mathematical tool write a programme code to plot the curve $r = 2(\cos 2\theta)$	05	L2	CO5
		Module – 2			
Q.3	a.	Expand $\log(\sec x)$ upto the term containing x^4 using Maclaurin's series.	06	L2	CO2
	b.	If $z = e^{ax+by} f(ax - by)$ prove that $b\frac{\partial z}{\partial x} + a\frac{\partial z}{\partial y} = 2abz$	07	L2	CO2
	c.	Find the extreme value of the function $f(x, y) = x^3 + y^3 - 3x - 12y + 20$	07	L2	CO2
		OR			
Q.4	a.	Evaluate $\lim_{x \to 0}\left[\frac{a^x + b^x + c^x + d^x}{4}\right]^{1/x}$	08	L3	CO2
	b.	If $u = f\left(\frac{x}{y}, \frac{y}{z}, \frac{z}{x}\right)$ prove that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} + z\frac{\partial u}{\partial z} = 0$	07	L2	CO2
	c.	Using modern mathematical tool write a programme / code to show that $u_{xx} + u_{yy} = 0$. Given $u = e^x[x\cos y - y\sin y]$	05	L3	CO5
		Module – 3			
Q.5	a.	Solve $x\frac{dy}{dx} + y = x^3y^6$	06	L3	CO3
	b.	Find the orthogonal trajectories of $y^2 = 4ax$ where a is parameter.	07	L2	CO3
	c.	Solve $\frac{dy}{dx} - \frac{dx}{dy} = \frac{x}{y} - \frac{y}{x}$	07	L3	CO3

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OR

Q.6	a.	Solve $(xy^3 + y)dx + 2(x^2y^2 + x + y^4)dy = 0$	06	L3	CO3
	b.	Find the orthogonal trajectory of the cardioid $r = a(1 - \cos\theta)$.	07	L2	CO3
	c.	Find the general solution of the equation $(px - y)(py + x) = a^2p$ by reducing into Clairaut's form taking the substitution $X = x^2$, $Y = y^2$.	07	L2	CO3

Module – 4

Q.7	a.	Find the least positive values of x such that i) $71 \equiv x \pmod 8$ ii) $67 + x \equiv 1 \pmod 4$ iii) $89 \equiv (7 + 3) \pmod 5$	06	L2	CO4
	b.	Find the solutions of the linear congruence $14x \equiv 12 \pmod{18}$	07	L2	CO4
	c.	Encode STOP using RSA algorithm with key (2537, 13) using the prime numbers 43 and 59.	07	L3	CO4

OR

Q.8	a.	(i) Find the last digit of 7^{2013} (ii) Find the last digit of 13^{37}	06	L2	CO4
	b.	Solve the system of linear congruence $x \equiv 2 \pmod 3$; $x \equiv 3 \pmod 5$; $x \equiv 2 \pmod 7$, using Remainder theorem.	07	L3	CO4
	c.	Show that $2^{340} \equiv 1 \bmod 31$ by Fermat's little theorem.	07	L2	CO4

Module – 5

Q.9	a.	Find the rank of the matrix $\begin{bmatrix} 1 & 3 & -1 & 2 \\ 0 & 11 & -5 & 3 \\ 2 & -5 & 3 & 1 \\ 4 & 1 & 1 & 5 \end{bmatrix}$	06	L2	CO4
	b.	Solve the system of equations by using Gauss-Jordan method. $2x + y + 3z = 1$; $4x + 4y + 7z = 1$; $2x + 5y + 9z = 3$	07	L3	CO4
	c.	Using power method find the largest eigen value and the corresponding eigen vector of the matrix $A = \begin{bmatrix} 4 & 1 & -1 \\ 2 & 3 & -1 \\ -2 & 1 & 5 \end{bmatrix}$ by taking $[1\ 0\ 0]^T$ as the initial eigen vector upto two decimal places (Perform 5 iterations).	07	L2	CO4

OR

Q.10	a.	Solve the following system of equations by Gauss-Seidel method. $7x + 52y + 13z = 104$; $3x + 8y + 29z = 71$; $83x + 11y - 4z = 95$ (Carry out 4 iterations).	08	L3	CO4
	b.	For what values of a and b the system of equations $x + y + z = 6$; $x + 2y + 3z = 12$; $x + 2y + az = b$ has (i) no solution (ii) a unique solution and (iii) infinite number of solutions.	07	L2	CO4
	c.	Using modern mathematical tool write a programme / code to find the largest eigen value of $A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 5 & 1 \\ 3 & 1 & 1 \end{bmatrix}$	05	L3	CO5

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CBCS SCHEME

BIDTK158/258/22BD16

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 2025

Innovation and Design Thinking

Time: 1 hr. Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Design thinking supports in
   a) Developing the product
   b) Developing the strategy
   c) Developing the process
   d) All of these

2. What is design considerations are not linked with?
   a) Products
   b) Services
   c) Business
   d) Computers

3. Design thinking supports in developing product features to improve the services to the customers.
   a) Yes
   b) No

4. Design thinkers in an organizations are
   a) People
   b) Employees
   c) Managers
   d) All of these

5. What are the steps of Design Thinking process?
   a) Understand > Draw > Ideate > Create > Test
   b) Empathize > Define > Ideate > Prototype > Test
   c) Empathize > Design > Implement > Produce > Test
   d) Understand > Define > Ideate > Produce > Try

6. Which of the below firm is associated the most with design thinking?
   a) Ikea
   b) Ideo
   c) Idea
   d) Ikei

7. Design thinking helps in?
   a) Innovation
   b) Data analytics
   c) Financial planning
   d) Operational efficiency

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8. During which stage would you consult experts to learn more about the areas of concern and gain an understanding of other people's experiences?
   a) Prototype b) Define c) Ideate d) Empathize

9. When defining a problem your problem statement should include solutions?
   a) True b) False

10. Team based design thinking involves
    a) Right type of team b) Right team culture
    c) Leadership d) All of these

11. The main uses of a customer journey map are,
    a) This gives design thinkers a near first-hand experience of what a customer goes through.
    b) The map can give us the emotional roller coaster of the designer.
    c) The output of the map is a list of problems that the design techniques involve.
    d) The map also serves as a visual aid to communicate the situation of the user

12. Which among the below options is the most compelling type of story
    a) Visual b) Textual c) Graphs d) None of these

13. Journey mapping is also called as _____ mapping.
    a) Path b) Experience c) Conduct d) Feedback

14. A prototype is a simple experimental model of a proposed solution used to,
    a) Test ideas b) Validate ideas c) Both (a) and (b) d) None of these

15. Which of the following are not tools of design thinking
    a) Co-creation b) Prototype c) Mind mapping d) Online marketing

16. Co-creation with respect to design thinking means
    a) Building a new product with in the available resources.
    b) Any process that brings users and designers together to work towards a shared goal
    c) Finding a new market for the product available
    d) None of these

17. Mind mapping is used for
    a) Visualize b) Organize c) Classify d) All of these

18. Visualization as a tool of design thinking would involve presenting data through
    a) Clear presentations b) Images and Stories
    c) Both (a) and (b) d) None of these

19. The end goal of value chain analysis is to
    a) Create better value for the customers
    b) To set common skills and goals for value chain partners
    c) Both (a) and (b)
    d) None of these

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20. Rapid concept development with reference to design thinking tool refers to,
    a) New business opportunities
    b) Faster thinking ability
    c) Both (a) and (b)
    d) None of these

21. Procedure models facilitates communication between
    a) Business Analysts
    b) Process Partners
    c) Developers
    d) All of these

22. In the last few decades business process model has replaced organization's packages, Time and movement (TMS) and Total Quality Management (TQM).
    a) Yes
    b) No

23. Identify which is not the advantage of business process modeling from below options
    a) Improves process communications
    b) Increase control and consistency
    c) Improves operational efficiency
    d) Decreases market-share and in-turn revenues

24. Agile methods are popular in software industry but other industries do not want to pursue those agile methods.
    a) True
    b) False

25. Design thinking features include,
    a) Uses empathy to understand how people feel about using a product or service
    b) Ultimate goal is to improve customer live and knowledge
    c) Both (a) and (b)
    d) None of these

26. Agile method can accommodate changes at any time compared to the waterfall method
    a) True
    b) False

27. Design thinking encompasses,
    a) Feasibility
    b) Viability
    c) Desirability
    d) All of these

28. Where does the information of defining the problem in the define stage come from
    a) Testing stage
    b) Prototype stage
    c) Ideate stage
    d) Empathy stage

29. What is the meaning of SCRUM?
    a) Systematic customer resolution unravelling meeting
    b) Systematic continues recharge unravelling meeting
    c) Systematic customer redesign unravelling meeting
    d) Systematic continues recovery unravelling meeting

30. Agile methodology is a practice,
    a) Continuous iteration of development and testing in the software development process
    b) Continuous thinking of development and verify the software development process
    c) Continuous process of thinking and verify the software development process
    d) Continuous follow up of thinking and design the software development process

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31. Strategic management is the process of setting,
a) Goals b) Procedures c) Objectives d) All of these

32. Which of the below mentioned is not the practice of integrating design thinking and strategic innovation?
a) Reviewing b) Stimulating c) Collaborating d) All of these

33. Sustaining innovation means,
a) Concept of improving and growing the existing markets
b) Create a new value to the existing market and also create a completely new market
c) Both (a) and (b)
d) None of these

34. Disruptive innovation means,
a) Concept of improving and growing the existing markets
b) Create a new value to the existing market and also create a completely new market
c) Both (a) and (b)
d) None of these

35. Radical innovation refers to,
a) a new technology completely disrupts existing business or economy and creates a new business model
b) refers to a series of small, gradually built improvements to existing products processes or methods to maintain competitive position over time
c) both (a) and (b)
d) None of these

36. Architectural innovation is described as the reconfiguration of existing product technologies,
a) True b) False

37. In what type of innovation one or more components of a product is changed while the overall design stays the same.
a) Architectural innovation b) Modular innovation
c) Both (a) and (b) d) None of these

38. Which of the below mentioned is the feature of strategic innovation?
a) Concept is based on long term perspective
b) To create competitive space for the products and services
c) Combines business process with creative solutions to the problems in the organizations
d) All of these

39. What are the four quadrants of innovation matrix?
a) Radically disruptive-incrementally disruptive
b) Radically sustaining-incrementally sustaining
c) both (a) and (b)
d) None of these

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40. Benefits of interaction between the design thinking and strategic innovation in an organization are,
a) Design thinking helps in developing products and services and in turn strategy of the organization.
b) Design thinking provides an opportunity to integration of new idea essential for the development of right strategy for the organization.
c) both (a) and (b)
d) None of these

41. Mr. Rahul wants to design a new bed that he can sell to nursing homes to use with their patients. However, Rahul doesn't want anything to do with older adults or people with disabilities. According to the design thinking process, Mr.Rahul will face problems because he is missing _____.
a) Empathy b) Creativity c) Practicality d) Imagination

42. Mr. Ram is creating a new product for university students. He takes a design thinking approach. His first step is addressing who he is creating the product for and conducts research on understanding this target market. What is this step in the design thinking process?
a) Define b) Ideate c) Empathize d) Prototype

43. Learning goals in design thinking workshop are related to,
a) Define learning outcomes b) Mapping with the problem statement
c) Understanding culture of the organization d) Defining learning styles

44. During the design thinking workshop, providing introduction is important to engage participants.
a) True b) False

45. Closing remarks of the design thinking workshop supports in motivating the participants to apply concepts of design thinking at the workplace.
a) True b) False

46. Stages of Design thinking workshop are planning stage and workshop stage
a) True b) False

47. In the stages of design thinking, empathy means
a) Identifying areas of concern in the business
b) Identifying from the persepective of the employees
c) Identifying from the perspective of the product
d) All of these

48. You will interview people to gain an understanding of how they feel during the _____ stage of design thinking.
a) Test b) Define c) Ideate d) Empathize

49. Prototype should only be demonstrated and tested within the team.
a) True b) False

50. No alterations are to be made after the testing phase.
a) True b) False

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CBCS SCHEME

BICOK107/207

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2025
Indian Constitution

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. The Governor of a state is appointed by the President on the advice of the
   a) Prime Minister b) Vice - President c) Chief Minister d) Chief - Justice

2. The President gives his resignation to the
   a) Chief Justice b) Parliament c) Vice - President d) Prime Minister

3. For what period does the Vice President of India hold office?
   a) 5 years b) Till the age of 65 years
   c) 6 years d) 2 years

4. Who among the following holds office during the pleasure of the President?
   a) Governor b) Election Commissioner
   c) Speaker of Lok Sabha d) Prime Minister

5. Which of the following is not true regarding the payment of the emoluments of the President :
   a) They can be reduced during a financial emergency
   b) They are shown separately in the budget
   c) They are charged on the contingency fund of India
   d) They do not require any parliament sanction

6. The total number of members nominated by the President to the Lok Sabha and the Rajya Sabha is
   a) 16 b) 18 c) 14 d) 12

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7. Which one of the following does not constitute the electoral college for electing the President?
   a) Elected members of Lok Sabha
   b) Elected members of Legislative Assembly of each state
   c) Elected members of the Legislative council
   d) Elected members of Rajya Sabha.

8. The Council of ministers in a parliamentary type of Government can remain in office till it enjoys the support of the
   a) Minority of members of the Upper house of Parliament
   b) Majority of the members of the Upper house of Parliament
   c) Minority of members of the Lower house
   d) Majority of the members of the Lower house of Parliament

9. Which of the following appointments is not made by the President of India?
   a) Chief of the Army
   b) Speaker of the Lok Sabha
   c) Chief Justice of India
   d) Chief of the Air force

10. Who appoints the Prime Minister of India?
    a) Lok Sabha
    b) President
    c) Parliament
    d) Citizen of India

11. The first Woman Governor of a State in free India was
    a) Mrs. Indira Gandhi
    b) Mrs Vijaya Lakshmi Pandit
    c) Mrs Sarojini Naidu
    d) Mrs Sucheta Kripalani

12. Minimum age required to contest for Presidentship is
    a) 23 years
    b) 21 years
    c) 35 years
    d) 30 years

13. The charge of impeachment against the President of India for his removal can be preferred by
    a) Both Houses of Parliament
    b) Speaker of Lok Sabha and Chairman of Rajya Sabha
    c) Rajya Sabha
    d) Lok Sabha

14. The Chief Minister of the Union Territory where such a set up exists ; is appointed by the
    a) Lt. Governor
    b) Majority party in Legislature
    c) President
    d) Prime Minister

15. Who was the first Prime Minister of India?
    a) Jawaharlal Nehru
    b) Mrs. Indira Gandhi
    c) Dr. Rajendra Prasad
    d) Mahatma Gandhi

16. In case a President dies while in office, the Vice President can act as President for a maximum period of
    a) 1 year
    b) 3 months
    c) 6 months
    d) 2 years

17. The Union Council of Ministers consists of
    a) Cabinet Ministers, Minister of State and Deputy ministers
    b) Cabinet Ministers and Chief Minister of the States
    c) Prime Minister
    d) Cabinet Ministers

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18. Who administers the Oath of office of the President of India before he enters upon the office?
a) Chief Justice b) Speaker c) Vice President d) Prime Minister

19. Who among the following enjoys the rank of a Cabinet Minister of the Indian Union?
a) Secretary to the Government of India
b) Deputy Chairman of the Planning Commission
c) Deputy Chairman of Rajya Sabha
d) None of the above

20. A person who is not a member of parliament can be appointed as a Minister by the President for a maximum period of
a) 9 Months b) 3 Months c) 12 Months d) 6 Months

21. When can President use his discretion in appointing the Prime Minister?
a) When no political party enjoys a clear majority in the Lok Sabha
b) Only when the Lok Sabha has be dissolved
c) In all circumstances d) In no circumstances

22. If in a Country three happens to be the office of monarchy as well as parliamentary form of Government this monarch will be called
a) Head of the State b) Head of the Cabinet
c) Head of the Government d) Both head of Government and State

23. One feature distinguishing the Rajya Sabha from the Vidhan Parishad is
a) Power of impeachment b) Indirect election
c) Nomination of members d) Tenure of membership

24. Chief Ministers of all the States are ex – officio members of the
a) Planning Commission b) National Development Council
c) Inter State Council d) Finance Commission

25. Who, among the following has the final right to sanction the expenditure of public money in India?
a) Speaker b) President c) Prime Minister d) Parliament

26. Which of the following is not an essential qualification for appointment as a Governor?
a) He must not be a member of either house of Parliament
b) He should be a domicile of the State to which he is being appointment
c) He should be a Citizen of India
d) He must have completed the age of 35 years

27. The President nominates 12 members of Rajya Sabha according to
a) Their performance as office bearers of cultural societies.
b) The recommendation made by the Vice President.
c) Their role played in political set up of the Country.
d) Their distinction in the field of science , art ,literature and social service.

28. Which Article of the Constitution empowers the President to appoint a Commission to investigate the condition of backward classes in general and suggest ameliorative measures?
a) Art. 342 b) Art. 344 c) Art. 340 d) Art. 339

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40. Who among the following can attend meetings of the Union Cabinet?
a) President b) Cabinet Ministers c) Ministers of State d) Deputy Ministers

41. Who among the following has the Constitutional authority to make rules and regulations fixing the number of members of UPSC?
a) Vice - President b) President c) Home Minister d) Cabinet Secretary

42. Under whose advice the President of India declares Emergency under Article 352?
a) Chief Ministers of all States b) Prime Minister
c) Cabinet d) Council of Ministers

43. Who act as the President of India when the President or the Vice – President are not in the office?
a) Senior most Governor of State b) Chief Justice of India
c) Speaker of Lok Sabha d) Auditor General of India

44. A proclamation emergency issued under Article 36 must be approved by the Parliament within
a) 3 months b) 2 months c) 1 month d) 6 weeks

45. The Union Council Ministers is appointed by the
a) President of India according to his discretion
b) President of India on the advice of the Prime Minister
c) Prime Minister of India
d) Parliament

46. The President can proclaim emergency on the written advice of the
a) Speaker of Lok Sabha b) Prime Minister
c) Chief Justice of India d) Union Cabinet

47. The Union Council of Ministers is collectively responsible to
a) Rajya Sabha b) President
c) House of the people d) Prime Minister

48. Article 78 of the Constitution deals with the
a) President power to get information from the Council of Ministers
b) Prime Minister duty regarding keeping the President informed about the government decisions and Policies.
c) Emergency powers of the President
d) President's power to send advisory messages to the Parliament.

49. The maximum duration for which the Vice – President may officiate as the President is
a) 1 year b) 6 months c) 4 months d) 9 months

50. The President's rule in a State can be continued for a maximum period of
a) 2 years b) 1 year c) 6 months d) 2½ years

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CBCS SCHEME

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BMATS101

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Mathematics – I for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With usual notation prove that $\tan\phi = r\cdot\frac{d\theta}{dr}$.	6	L2	CO1
	b.	Find the angle between the curves $r = 6\cos\theta$ and $r = 2(1+\cos\theta)$.	7	L2	CO1
	c.	Find the radius of curvature for the Folium of De-Cartes $x^3 + y^3 = 3axy$ at the point $\left(\frac{3a}{2}, \frac{3a}{2}\right)$ on it.	7	L2	CO1
		OR			
Q.2	a.	Show that the curves $r = a(1+\sin\theta)$ and $r = a(1-\sin\theta)$ cut each other orthogonally.	8	L2	CO1
	b.	Find the pedal equation of $r^n = a(1+\cos n\theta)$.	7	L2	CO1
	c.	Using modern mathematical tool, write a program/code to plot the curve sine and cosine curve.	5	L3	CO5
		Module – 2			
Q.3	a.	Using Maclaurin's series, expand $\sqrt{1+\sin 2x}$ in powers of x upto the terms x^4.	7	L2	CO1
	b.	If $U = e^{ax+by}f(ax-by)$, prove that $b\frac{\partial U}{\partial x} + a\frac{\partial U}{\partial y} = 2abU$.	6	L2	CO1
	c.	Find the extreme values of the function $\sin x + \sin y + \sin(x+y)$.	7	L3	CO1
		OR			
Q.4	a.	Evaluate the $\lim_{x\to 0}\left[\frac{a^x + b^x + c^x + d^x}{4}\right]^{1/x}$.	8	L2	CO1
	b.	If $U = f(2x-3y, 3y-4z, 4z-2x)$, prove that $\frac{1}{2}\frac{\partial U}{\partial x} + \frac{1}{3}\frac{\partial U}{\partial y} + \frac{1}{4}\frac{\partial U}{\partial z} = 0$.	7	L2	CO1
	c.	Using modern mathematical tool, write a program/code to evaluate $\lim_{x\to\infty}\left(1+\frac{1}{x}\right)^x$.	5	L3	CO5
		Module – 3			
Q.5	a.	Solve $\frac{dy}{dx} + \frac{y}{x} = x^2y^6$.	6	L2	CO2
	b.	Find the orthogonal trajectories of the family $r = a(1+\sin\theta)$.	7	L3	CO2
	c.	Find the solution of the equation $x^2(y-Px) = P^2y$ by reducing into Clairaut's form using the substitution $X = x^2$, $Y = y^2$.	7	L2	CO2
		OR			

Q.6	a.	Solve $(8xy-9y^2)dx+2(x^2-3xy)dy=0$.	6	L2	CO2
	b.	A voltage Ee^{-at} is applied at t = 0 to a circuit of inductance L and resistant R. Find the current at any time t given that the current is initially zero when t = 0.	7	L3	CO2
	c.	Solve $x(y')^2-(2x+3y)y'+6y=0$.	7	L2	CO2
		Module – 4			
Q.7	a.	i) Find the last digit in 7^{289}. ii) Find the remainder when 135 × 74 × 48 is divided by 7.	7	L2	CO3
	b.	Solve the linear congruence $6x \equiv 15(\text{mod}\,21)$.	6	L2	CO3
	c.	Using Wilson's theorem, show that 4(29)! + 5! is divisible by 31.	7	L2	CO3
		OR			
Q.8	a.	Solve the set of simultaneous congruences $x \equiv 5(\text{mod}3)$, $x \equiv 2(\text{mod}5)$, $x \equiv 1(\text{mod}11)$.	7	L2	CO3
	b.	Solve $7x+3y \equiv 10(\text{mod}16)$, $2x+5y \equiv 9(\text{mod}16)$.	6	L2	CO3
	c.	Show that $2^{340}-1$ is divisible by 31, using Fermat's little theorem.	7	L2	CO3
		Module – 5			
Q.9	a.	Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 4 & 3 \\ 2 & 4 & 6 & 8 \\ 4 & 8 & 12 & 16 \\ 1 & 2 & 3 & 4 \end{bmatrix}$	6	L2	CO4
	b.	Solve the system of equation by using Gauss-Jordan method. $x+y+z=8$, $-x-y+2z=-4$, $3x+5y-7z=-14$	7	L3	CO4
	c.	Using Rayleigh's power method, find the largest eigen value and the corresponding eigen vector of the matrix $A=\begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 2 \end{bmatrix}$ by taking initial vector as $[1\ 1\ 1]^T$. Perform 6 iterations.	7	L3	CO4
		OR			
Q.10	a.	Solve the system of equation by using Gauss elimination method. $x+2y+z=3$, $2x+3y+3z=10$, $3x-y+2z=13$	8	L3	CO4
	b.	Solve the following system of equations by Gauss-Seidal method $20x+y-2y=17$, $3x+20y-z=-18$, $2x-3y+20z=25$	7	L3	CO4
	c.	Using modern mathematical tool, write a programme/code to test the consistency of the equation: $x+2y-z=1$, $2x+y+4z=2$, $3x+3y+4z=1$	5	L3	CO5

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CBCS SCHEME

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BCHES102/202

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Applied Chemistry for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the working principle of conductometric sensors and mention any two applications.	06	L2	CO2
	b.	Discuss the construction and working of Li-ion batteries. Mention its applications.	07	L2	CO4
	c.	Describe the application of Electrochemical gas sensors for the detection of SO_x and NO_x.	07	L3	CO3
		OR			
Q.2	a.	Explain the working principle of an Electrochemical sensor in the detection of Dissolved Oxygen (DO).	06	L2	CO2
	b.	Discuss the construction and working of Quantum Dot Sensitized Solar Cells (QDSSCs). Mention its applications.	07	L2	CO4
	c.	Describe the use of disposable sensor in the detection of herbicide Glyphosate.	07	L3	CO3
		Module – 2			
Q.3	a.	What are memory devices? Explain the classification of Electronic memory devices with examples.	07	L1 L2	CO1
	b.	What are nanomaterials? Explain any four properties of polythiophenes (P_3HT) suitable for optoelectronic devices.	07	L1 L2	CO1 CO4
	c.	Mention any three properties and applications of QLED.	06	L1	CO4
		OR			
Q.4	a.	Explain the types of organic memory. Devices by taking p-type and n-type semiconductor materials.	07	L2	CO2
	b.	What are photoactive and electroactive materials and explain their working principle in the display system.	07	L2	CO1 CO2
	c.	Mention any 3 properties and applications of LC-displays.	06	L1	CO4
		Module – 3			
Q.5	a.	Define metallic corrosion. Describe the electrochemical theory of corrosion taking.	07	L1 L2	CO1 CO2
	b.	Describe galvanizing and mention its applications.	06	L2	CO4
	c.	What is CPR? A thick brass sheet of area 400 inches exposed to moist air. After 2 years of period. It was found to experience a weight loss of 375 g due to corrosion. If the density of brass is 8.73 g/cms, calculate CPR in mpy and mmpy.	07	L2	CO1 CO3
		OR			
Q.6	a.	Explain the construction and working of the Calomel electrode.	07	L2	CO2
	b.	Explain the application of conductometric electrodes in the estimation of a weak acid.	06	L2	CO4
	c.	Define concentration cell. Derive an expression for emf of the cell.	07	L1 L2	CO1 CO3

		Module – 4			
Q.7	**a.**	A polydisperse sample of polystyrene is prepared by mixing three monodisperse samples in the following proportions. 1 g of 10000 molecular weight. 2 g of 50000 mol. wt and 2 g of 100000 mol.wt. Determine the number and weight average mol. wt.	**07**	**L2**	**CO3**
	b.	What is Green fuel (hydrogen fuel)? Mention the advantages of Green fuel.	**06**	**L1**	**CO1**
	c.	Explain the construction and working of Photovoltaic cells.	**07**	**L2**	**CO2**
		OR			
Q.8	**a.**	Discuss the conduction mechanism in polyacetylene through oxidative or reductive doping techniques (Any one).	**07**	**L3**	**CO2**
	b.	Explain the generation of hydrogen by alkaline water electrolysis.	**07**	**L2**	**CO4**
	c.	Explain the preparation, properties and applications of Kevlar.	**06**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	What is e-waste? Explain the need for e-waste management.	**07**	**L2**	**CO1**
	b.	Explain the process of recycling e-waste.	**06**	**L2**	**CO5**
	c.	Discuss the following : (i) Pyrometallurgy (ii) Hydrometallurgy	**07**	**L3**	**CO5**
		OR			
Q.10	**a.**	Explain the extraction of gold from e-waste.	**07**	**L2**	**CO2**
	b.	Write a brief note on the role of stakeholders for example: Producers, Consumers, Statutory bodies.	**07**	**L3**	**CO5**
	c.	Explain the health hazards due to exposure to e-waste.	**06**	**L2**	**CO3**

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CBCS 2022 – SCHEME

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BCEDK103/203

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours (COMMON TO ALL BRANCHES) **Max.Marks:100**

Note: 1. Answer all four full question.

2. Grid sheets may be provided for making preparatory sketches.

Q. No.		Marks
	Module – 1	
1	A regular hexagonal lamina of sides 25 mm is lying in such a way that one of its sides on HP while the side opposite to the side on which it rests is on VP. If the lamina makes 60^0 to HP, Draw the projections of the lamina.	20
	Module – 2	
2	A pentagonal pyramid 25 mm sides of base and 50 mm axis length rests on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45^0.	30
	Module – 3	
3	A sphere of 60 mm is placed centrally on the top face of a hexagonal prism side-35 mm and height 50 mm. Draw the isometric projection of the combination.	25
	Module - 4	
4	A regular pentagonal pyramid of sides of base 35 mm and altitude 65 mm has its base on HP with a side of the base perpendicular to VP. The pyramid is cut by a section plane which is perpendicular to VP and inclined at 30^0 to HP. The cutting plane meets the axis of the pyramid at point 30 mm below the vertex. Obtain the development for the solid.	25

Examiner 1:
Name: Dr. Naveen
Signature: 27/2/24

Examiner 2:
Name: Dr. Manjunatha.C
Signature: 27/02/2024

CBCS 2022 – SCHEME

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BCEDK103/203

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours (COMMON TO ALL BRANCHES) **Max.Marks:100**

Note: 1. Answer all four full question.

2. Grid sheets may be provided for making preparatory sketches.

Q. No.		Marks
	Module – 1	
1	A square lamina ABCD of 40 mm side rests on corner A, such that the diagonal AC appears to be at 45° to VP. The two sides AD and AB containing the corner A make equal inclinations with HP. The surface of the lamina makes 30° with HP. Draw its top and front views.	20
	Module – 2	
2	A square pyramid 35 mm sides of base and 60 mm axis length on HP on one of its slant triangular faces. Draw the projections of the pyramid when the axis appears to be inclined to VP at 45^0.	30
	Module – 3	
3	A regular pentagonal prism of base edge 30 mm and axis 60 mm is mounted centrally over a cylindrical block of 80 mm diameter and 25 mm thick. Draw isometric projection of the combined solids.	25
	Module - 4	
4	A regular pentagonal prism of height 60 mm and base edges 30 mm rests with its base on HP. The vertical face closer to VP is 30^0 to it. Draw the development of the truncated prism with its truncated surface inclined at 60^0 to its axis and bisecting it.	25

Examiner 1:
Name:
Signature:

Examiner 2:
Name:
Signature:

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CBCS 2022 – SCHEME

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BCEDK103/203

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours (COMMON TO ALL BRANCHES) **Max.Marks:100**

Note: 1. Answer all four full question.

2. Grid sheets may be provided for making preparatory sketches.

Q. No.	Module – 1	Marks
1	A hexagonal lamina of sides 25 mm rests on one of its corners on HP. The lamina makes 45^0 to HP and the diagonal passing through the corner on which it rests is inclined at 30^0 to VP. Draw its projections.	20
	Module – 2	
2	A pentagonal pyramid 25 mm sides of base and 50 mm axis length rests on HP on one of the corners of the base such that the two base edges containing the corner on which it rests make equal inclinations with HP. Draw the projections of the pyramid when the axis of the pyramid is inclined to HP at 40^0 and to VP at 30^0.	30
	Module – 3	
3	A sphere of 60 mm is placed centrally on the top face of a pentagonal prism side-35 mm and height 50 mm. Draw the isometric projection of the combination.	25
	Module - 4	
4	Draw the development of the truncated portion of the lateral faces of a pentagonal prism of 20 mm sides of base and 50 mm axis length with one of its rectangular faces parallel and nearer to VP so as to produce a one piece development. The inclined face of the truncated prism is 30^0 to its axis and passes through the right extreme corner of the top face of the prism.	25

Examiner 1:
Name:
Signature:

Examiner 2:
Name:
Signature:

CBCS SCHEME

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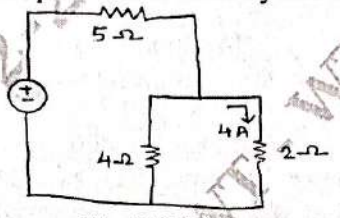
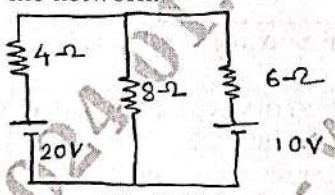
BESCKB104/BESCK104B

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Introduction to Electrical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain nuclear power generation with the help of neat block diagram.	7	L1	CO1
	b.	In the circuit shown find the power delivered by the source.  Fig.Q.1(b)	7	L3	CO1
	c.	State and explain Ohm's law with its limitations.	6	L1	CO2
		OR			
Q.2	a.	State and explain Kirchoff's current and voltage laws.	7	L1	CO1
	b.	Explain the general structure of electrical power system, using single line diagram.	7	L1	CO1
	c.	Calculate the currents in the network.  Fig.Q.2(c)	6	L3	CO2
		Module – 2			
Q.3	a.	Obtain the behavior of voltage, current and power in a pure resistor connected to 1-ϕ A.C. supply. Draw the voltage, current and power waveforms.	7	L2	CO2
	b.	A current of average value 18.019A is flowing in a circuit to which a voltage of peak value 141.42V is applied. Determine: i) Impedance in polar form. ii) rms values of voltage and current. iii) Power consumed by the circuit. Assume voltage lags current by 30°.	7	L3	CO2

	c.	Define following terms related to sinusoidal waveform of AC parameter: i) Instantaneous value ii) Amplitude iii) Frequency iv) Time period v) Form factor vi) Peak factor.	6	L1	CO1
		OR			
Q.4	a.	Derive the equation of the power consumed by R-L series circuit. Also draw the waveforms of voltage current and power.	7	L3	CO2
	b.	A circuit consist of a resistance of 20Ω, an inductance of 0.05H connected in series. A supply voltage of 230V, 50Hz is applied across the circuit. Find the current, P.F. and power consumed by the circuit. Draw the vector diagram.	7	L3	CO2
	c.	What are the advantages of a 3-ϕ system over a single phase system?	6	L1	CO1
		Module – 3			
Q.5	a.	With a neat diagram, explain the construction of D.C. generator.	7	L1	CO3
	b.	A 4 pole lap connected DC generator has 600 armature conductors and run at 1200rpm. The generator has total flux of 0.24wb, calculate the emf induced. Find the speed at which it should be driven to produce the same emf when wave connected.	7	L3	CO2
	c.	Derive the torque equation of a D.C. motor.	6	L2	CO2
		OR			
Q.6	a.	A 4 pole, 250V series motor has wave connected armature with 1254 conductors. The flux per pole is 22mwb, when the motor is taking 50A. The armature and series field coil resistances are 0.3Ω and 0.2Ω respectively. Calculate the speed and torque of the motor and also power developed in watts.	7	L3	CO2
	b.	With usual notations derive an emf equation of D.C. generator.	7	L2	CO2
	c.	Explain the following characteristics of a D.C. shunt motor: i) Torque vs armature current ii) Speed vs armature current.	6	L2	CO2
		Module – 4			
Q.7	a.	Derive the emf equation of a transformer and hence obtain the voltage and current transformation ratios.	6	L2	CO2
	b.	With neat figure explain the construction of two types of rotor of a 3-ϕ induction motor.	7	L2	CO1
	c.	A 125KVA transformer has a primary voltage of 2000V at 60Hz with 182 and 40 turns on primary and secondary respectively. Calculate: i) no load secondary emf ii) Full load primary and secondary currents iii) Max value of flux in the core.	7	L3	CO2

		OR			
Q.8	a.	Explain how a rotating magnetic flux is created in the stator of 3-ϕ induction motor.	7	L2	CO2
	b.	A 3-ϕ, 6 pole, 50Hz induction motor has a slip of 3% at full load. Find the synchronous speed, rotor speed and the frequency of rotor current at full load.	7	L3	CO2
	c.	Explain the various losses in a transformer and how to minimize them.	6	L1	CO2
		Module – 5			
Q.9	a.	Explain two way and three way control of lamps with circuit diagram and truth table.	7	L1	CO2
	b.	Define "unit" used for consumption of electrical energy and explain the two part tariff with its advantages and disadvantages.	6	L1	CO2
	c.	What is earthing? Explain plate earthing with neat figure.	7	L2	CO4
		OR			
Q.10	a.	What is electric shock? Write a note on precautions against electric shock.	6	L2	CO5
	b.	List out the power rating of household appliances including air conditioners, PCs, laptops, printers etc.	7	L2	CO5
	c.	Explain casing-capping wiring with neat diagram.	7	L2	CO4

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BESCK104D/BESCKD104

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Introduction to Mechanical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	a.	Explain the role of mechanical engineering in society.	10	L2	CO1
	b.	Explain the emerging trends and technologies in the following sectors. i) Manufacturing sector ii) Automotive sector iii) Aerospace sector iv) Marine sector.	10	L2	CO1
		OR			
Q.2	a.	With a neat sketch, explain the working principle of Hydel power plant.	10	L2	CO1
	b.	Write short notes on: i) Fossil fuels ii) Bio-fuels.	10	L2	CO1
		Module – 2			
Q.3	a.	What is lathe? With neat sketch explain the working principle of lathe machine.	6	L2	CO2
	b.	With neat sketches, explain the following lathe operations. i) Turning operation ii) Knurling operation.	8	L2	CO2
	c.	Differentiate between up milling and down milling.	6	L2	CO2
		OR			
Q.4	a.	What is CNC? With neat sketches, explain the basic components of CNC.	8	L2	CO2
	b.	List the advantages and disadvantages of CNC.	6	L1	CO2
	c.	List the advantages and disadvantages of 3D printing.	6	L2	CO2
		Module – 3			
Q.5	a.	With a neat sketch, explain the components of I.C engine.	10	L2	CO3
	b.	With a neat sketch, explain the working principle of 4-stroke petrol engine along with PV diagram.	10	L2	CO3
		OR			
Q.6	a.	What is an electric vehicle? Briefly explain the components of an electric vehicle.	10	L2	CO3
	b.	State the advantages and disadvantages of EVs and hybrid vehicles.	10	L2	CO3

		Module – 4			
Q.7	**a.**	Write the composition, properties and applications of the following materials. i) Cast iron ii) High carbon steel iii) Alluminium iv) Copper.	**10**	**L2**	**CO4**
	b.	Write short notes on : i) Polymers ii) Shape memory alloys.	**10**	**L2**	**CO3**
		OR			
Q.8	**a.**	What is Welding? With a neat sketch, explain the working principle of Electric Arc Welding.	**10**	**L2**	**CO4**
	b.	With neat sketches, explain 3 types of flames used in gas welding process.	**5**	**L2**	**CO4**
	c.	List the applications of welding.	**5**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	With the help of block diagram, explain open loop and closed-loop control systems.	**10**	**L2**	**CO5**
	b.	With neat sketches, explain four basic robot configurations.	**10**	**L2**	**CO5**
		OR			
Q.10	**a.**	What is Automation? Explain 3 types of automation.	**10**	**L2**	**CO5**
	b.	Briefly explain characteristics of I.O.T.	**10**	**L2**	**CO5**

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BPLCK105B/BPLCKB105

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Introduction to Python Programming

Time: 3 hrs. Max. Marks: 100

Note: **1.** ***Answer any FIVE full questions, choosing ONE full question from each module.***
2. ***M : Marks , L: Bloom's level , C: Course outcomes.***

		Module – 1	M	L	C
Q.1	a.	List and explain the use of comparison operator in python. Write the step by step execution of the following expression in python. 3/2 * 4 + 3 + (10/4)**3 – 2	6	L1	CO1
	b.	Explain the control statements, if, else, elif with proper syntax and examples.	6	L2	CO1
	c.	Develop a python program to calculate the area and circumference of a circle input the value of radius and print the results.	8	L3	CO1
		OR			
Q.2	a.	Explain the string concatenation and string replication operator with an example.	6	L2	CO1
	b.	Explain local and global scope of variable with suitable example.	6	L2	CO1
	c.	Develop a program to read the student details Like Name, USN and Marks in three subjects. Display the student details, total marks and percentage with suitable messages.	8	L3	CO1
		Module – 2			
Q.3	a.	What is list? Explain the concept of list indexing and slicing with examples.	6	L2	CO2
	b.	With suitable examples, explain the list methods append( ), extend( ), sort( ), count( ) and pop( ).	8	L2	CO2
	c.	Read N numbers from the console and create a list. Develop a program to print mean, variance and standard deviation with suitable message.	6	L3	CO2
		OR			
Q.4	a.	Define tuple data type? List out the difference between tuple and list.	6	L2	CO2
	b.	Identify and explain the dictionary methods like get( ), item( ), keys( ) and values ( ) in python with examples.	8	L2	CO2
	c.	Develop a python program to swap two numbers without using Intermediate variables. Prompt the user for input.	6	L2	CO3

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		Module – 3			
Q.5	a.	Write the output of the following : i) 'HeLLo'·upper( ) · isupper ( ) ii) 'HeLLo'·upper( ) ·lower( ) iii) '__' ·Join('There can be only one'·split( ))	6	L2	CO3
	b.	With examples, explain any five string methods.	6	L2	CO3
	c.	Develop a python program to count the total number of vowels, consonants in a string.	8	L3	CO3
		OR			
Q.6	a.	Make use of the concept of file handling and explain Reading and writing process with suitable python programs.	7	L2	CO3
	b.	Explain the concept of file path, also discuss absolute and relative paths.	7	L2	CO3
	c.	Briefly, explain saving variables with shelve module.	6	L2	CO3
		Module – 4			
Q.7	a.	Explain the following file operations in python with suitable examples. i) Copying files and folders ii) Moving files and folders iii) Permanently deleting files and folders	6	L2	CO3
	b.	List out the benefits of compressing file with zip file module, also explain the concepts of walking a directory tree.	8	L2	CO3
	c.	List out the difference between shutil.copy( ) and shutil.copytree( ) methods.	6	L3	CO3
		OR			
Q.8	a.	Briefly explain Assertion and raising a exception.	6	L2	CO3
	b.	Develop a python program with a function named DivExP which takes two parameters a, b and returns a value C, (C = a/b). Write suitable assertion for a > 0 in function DivExP and raise on exception for when b = 0. Program has to read two values from the console and call a function DivExP.	8	L3	CO3
	c.	Briefly explain the difference logging levels.	6	L2	CO3
		Module – 5			
Q.9	a.	Define classes and objects in Python. Construct the class called rectangle and initialize it with height = 100, width = 200, starting point as (x = 0, y = 0) and write the method to display the center point coordinates of a rectangle.	8	L2	CO4
	b.	Briefly explain the concept of prototyping and planning.	6	L2	CO4
	c.	Explain Clearly __init( )__ and __str( )__ method with examples.	6	L2	CO4
		OR			
Q.10	a.	Explain the term objects are mutable with an example.	6	L2	CO4
	b.	Explain the concept of polymorphism with examples.	8	L2	CO4
	c.	Explain briefly pure functions and modifiers with examples.	6	L2	CO4

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CBCS SCHEME

BPWSK106/206

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Professional Writing Skills in English

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Choose the Appropriate Answer from the given options : (Q. No.1 to Q.No.10).

1. Which of these qualities are important in group discussion?
   a) Emotional stability
   b) Hostility
   c) Ignorance
   d) Aggressiveness

2. The first objective in a group discussion is to :
   a) prove your superiority
   b) acts as a self – appointed a group
   c) create subgroup
   d) catch the groups attention

3. In an interview when you do not know an answer, you should :
   a) bluff
   b) keep guessing
   c) admit you do not know the answer
   d) remain quiet

4. A summary placed at the beginning of the CV acts as
   a) Synopsis
   b) Statement of Objectives
   c) Preface
   d) Letter of recommendation

5. The application letter is :
   a) a foreword
   b) a description of your core strength and suitability for the Job
   c) statement of your Job objective
   d) a summary of your qualification and experiences.

6. The best way to apply for a Job is to submit a resume that is :
   a) Self - recommending
   b) Suitable for any Job
   c) Specifically written for the particular Job
   d) Full of personal information.

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7. Which kind of interview includes a process in which the employability of the Job applicant is evaluated?
   a) stress interview
   b) screening interview
   c) group interview
   d) behaviour interview

8. "Tease" or "Stress" questions are intended to judge :
   a) how the candidate handles them
   b) the candidate's intelligence quotient
   c) the candidate's stress level
   d) the candidates technical skills

9. The left part of our brain controls :
   a) emotions b) creativity c) imagination d) logic & reasoning

10. When should you arrive for you interview?
    a) at the time it is schedules
    b) 5 – 10 minutes after the scheduled time
    c) 5 – 10 minutes before the scheduled time
    d) go after 10 minutes

11. A panel interview is known as :
    a) panel interview
    b) face to face interview
    c) boards interview
    d) telephone interview

12. What are the successful strategies for interviews?
    a) Personal rapport
    b) good eye contact
    c) clear ideal of the key point
    d) all of the above

13. A precise should be written in _____ person :
    a) third person b) second person c) first person d) none of the above

14. What are the types of paragraph writing?
    a) narrative, persuasive
    b) descriptive
    c) expository
    d) all of these

15. Anticipating tone can promote.
    a) fear b) excitement c) aggression d) none of these

16. If the speaker uses the word, "but", he is making a point of _____
    a) Background b) Theme c) Setting d) Conflict

Choose the Appropriate Verb (subject verb agreement) that agrees with the subject (Q.No. 17 to Q.No 19)

17. A neon and organge T – shirt _____ chosen by me at the boutique.
    a) is b) was c) were d) are

18. Everyone in the family _____ been questioned about the theft.
    a) has b) were c) have d) is

19. Each of the six boys in the class _____ their task.
    a) was completed b) were completed c) have completed d) has completed

Select the correct meaning of the underline idioms (Q.No. 20 to Q.No. 22)

20. He is leaving the Country <u>for good</u>.
    a) for better prospects
    b) for a good cause
    c) for ever
    d) for other's good

21. Companies producing a good <u>play to the gallery</u> to boost their sales.
    a) advertises
    b) caters to the public taste
    c) attempt to appeal to popular taste
    d) depend upon the public for approval

22. It was he who put a spoke in my wheel.
    a) tried to cause an accident
    b) destroyed the plan
    c) helped in the execution of the plan
    d) thwarted in the execution of the past

Choose the appropriate answer from the given options (Q.No. 23 to Q.No. 25)

23. Which of the below statements is correct in the case of the title of the blog post?
    a) it should describe the content
    b) it should be catchy
    c) it should contain a focus keyword
    d) all of the above

24. Creating and publishing video content on a blog is called.
    a) Vlog
    b) News
    c) Media Blog
    d) All of these

25. What are the 4 headings of a memo?
    a) From, date, to, subject
    b) To, from, date, subject
    c) Subject, to, date, from
    d) None of these

Choose the appropriate phrases from the given option to fill in the blanks : (Q.No. 26 to Q.No. 28)

26. "You can have my seat. I am _____ at the next stop", said a young girl to me in the local train.
    a) getting in
    b) getting down
    c) getting away
    d) getting up

27. I _____ all the instructions, still was not happy.
    a) carries away
    b) carried off
    c) carried on
    d) carried out

28. The union has _____ the strike.
    a) called of
    b) called off
    c) called in
    d) called into

Choose the appropriate answer from the given options (Q.No. 29 to Q.No 30)

29. Which cannot come at the end of the sentence?
    a) a period
    b) a colon
    c) an exclamatory mark
    d) none of these

30. Which of these sentences has the comma in the right place?
    a) Please get me, some eggs milk and some butter.
    b) Please get me some eggs, milk and some butter
    c) Please get me some eggs milk, and some butter
    d) Please get me some eggs milk and, some butter

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Choose the correct tenses from the given option to fill in the blanks (Q.No. 31 to Q.No. 32)

31. Most workers _____ as labourers in factories where their wages were fixed.
a) is employed b) has employed c) were employed d) was employed

32. It _____ in Delhi since morning.
a) rained b) had been raining c) is raining d) has been raining

Read each sentence below and find out whether there is an error. The error, if any will be one of the part of the sentence which are marked as 1, 2, 3 and 4 (Q.No. 33 to Q.No 35)

33. Recently I visited (1) / Singapore and found (2) / the sceneries to be (3) / breath – taking (4).
a) 1 b) 2 c) 3 d) 4

34. The present datas (1) / shows that the (2) / death rate (3) / has fallen (4).
a) 1 b) 2 c) 3 d) 4

35. Darts are (1) / played by (2) / men as well (3) / as women (4).
a) 1 b) 2 c) 3 d) 4

Choose the appropriate answer from the given option (Q.No. 36 to Q.No 37)

36. The executive summary in technical writing is another name.
a) Cover letter b) Introduction c) Discussion d) All of these

37. A proposal is a medium aimed at _____
a) instruction b) persuasion c) pre vention d) advice

Choose the appropriate answer for the given option (Q.No. 38 to Q.No. 40)

38. They will rebuild the entire block.
a) the entire block id being rebuilt b) the block may be rebuilt entirely
c) the entire block will have to be rebuilt d) the entire block will be rebuilt

39. The captain said to his men, "Stand at ease".
a) the captain urged his men to stand at ease.
b) the captain wanted his men to stand at ease.
c) the captain told his men that they should stand at ease
d) the captain commanded his men to stand at ease.

40. The future of women in India is quite bright and let us hope that they will justify their abilities by rising to the occasion, Napoleon was right when he declared that by educating women, we can educate the whole nation. Because a Country can never rise without the contribution of 50% of its population.
The passage best supports the statement that :
a) India is striving hard for the emancipation of women
b) All women should be well educated
c) A Nation can progress only when women are given equal rights and opportunities as men
d) Women ought to be imparted full freedom to prove their worth and contribute to the progress of the Nation.

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Choose the appropriate answer for the given option (Q.No. 41 to Q.No. 50)

41. Which of these is the right format for writing the date in all the formats or a business letter?
a) 23/03/2023 b) 23rd March, 2023 c) March 23, 2023 d) both (b) and (c)

42. How is a complaint letter signed off?
a) Looking forward to getting prompt delivery
b) Looking forward to getting prompt and positive action
c) Looking forward to getting timely delivery of goods d) None of these

43. How should a business letter look like?
a) It has to be professional and effective by using the template
b) It should be written using east words so that an illiterate can also understand
c) It has to be written similarly to an informal letter
d) It should be written brief and short.

44. What is the sender's address of this letter?
a) Adidas India Pvt. Ltd. b) M/S Ram Prasad and Sons, Rewa (M.P)
c) Senders address not given d) None of these

45. _____ allows the user to send a file with an e – mail.
a) draft b) sent c) messenger d) attachments

46. What is the use of Carbon Copy (CC)?
a) recipient are invisible to all of the other recipients of the message in CC
b) recipients are visible to all of the other recipients of the message in the CC.
c) recipients are invisible to only one recipient of the message in the CC.
d) None of the above.

47. Positive gestures are body signals that make you look.
a) arrogant b) nervous c) relaxed d) hurtful

48. If a speaker winks after saying something it suggests to the audience that the subject is
a) non – serious b) incredible c) series d) true

49. In a presentation which things play an equal role?
a) context and voice b) text and font c) time and size d) sort and intent

50. Which of these is not a step in the listening process?
a) to stop talking b) receiving c) misinterpreting d) responding

* * * * *

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BKSKK107/207
Question Paper Version : A

First/Second Semester B.E/B.Tech. Degree Examination, Dec.2023/Jan.2024

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

(COMMON TO ALL BRANCHES)

Time: 1 hrs.] [Max. Marks: 50

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ ೫೦ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ಅಂಕ.
2. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಯು.ಎಸ್.ಎನ್ ಸಂಖ್ಯೆ ಹಾಗೂ ಪಶ್ನೆ ಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯನ್ನು ಅಂದರೆ A, B, C ಅಥವಾ D ಯನ್ನು ತಪ್ಪಿಲ್ಲದಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಗುರುತಿಸುವುದು ಅಭ್ಯರ್ಥಿಯ ಜವಾಬ್ದಾರಿಯಾಗಿರುತ್ತದೆ.
3. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ನಿಗದಿಪಡಿಸಿರುವ ಸ್ಥಳದಲ್ಲಿ ಭರ್ತಿಮಾಡದೆ ಹಾಗೆಯೇ ಬಿಟ್ಟಲ್ಲಿ ಅಥವಾ ಭರ್ತಿಮಾಡಿದ ಮಾಹಿತಿಯಲ್ಲಿ ಯಾವುದೇ ವ್ಯತ್ಯಾಸವಿದ್ದಲ್ಲಿ ಅಂತಹ ಉತ್ತರ ಪತ್ರಿಕೆಗಳನ್ನು ರದ್ದು ಪಡಿಸಲಾಗುವುದು.
4. ಕೇವಲ ಒಂದು ಉತ್ತರವನ್ನು ಮಾತ್ರ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಗುರುತಿಸತಕ್ಕದ್ದು. ಒಂದೆ ಪ್ರಶ್ನೆಗೆ ಎರಡು ಉತ್ತರವನ್ನು ಗುರುತಿಸುವುದು ಅಮಾನ್ಯ.
5. ಎಲ್ಲಾ ಉತ್ತರಗಳನ್ನು ನಿಮಗೆ ಒದಗಿಸಲಾದ ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯ ಹಾಳೆಯ ಮೇಲೆ ಕಪ್ಪು ಅಥವಾ ನೀಲಿ ಶಾಹಿಯ ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಗುರುತು ಮಾಡಬೇಕು.

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1. "ಪರಿಸರ, ಪರಂಪರೆ ಹಾಗೂ ಪ್ರತ್ಯಕ್ಷ ಜೀವನದ ಅನೇಕ ಸಂಸ್ಕಾರಗಳ ಮೂಲಕ ಮನುಷ್ಯನ ಅಂತರಂಗ ಪಡೆಯುವ ಪರಿಪಕ್ವತೆ" ಇದನ್ನು ಹಂಪ ನಾಗರಾಜಯ್ಯನವರು ಏನೆಂದು ಕರೆದಿದ್ದಾರೆ?
   a) ಸಂಸ್ಕೃತಿ b) ಆಚರಣೆ c) ಸಮನ್ವಯ d) ಸೌಂದರ್ಯ

2. ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಅಂಡಯ್ಯ ಕವಿಯ ಕಾವ್ಯ ಯಾವುದು?
   a) ಕಾವ್ಯ ಮೀಮಾಂಸೆ b) ಕಬ್ಬಿಗರ ಕಾವ್ಯ
   c) ಕರ್ನಾಟಕ ಗತವೈಭವ d) ಶ್ರೀರಾಮಾಯಣ ದರ್ಶನಂ

3. ರಾಜರಾಜರಲ್ಲಿ ಯುದ್ಧಗಳು ಏಕೆ ನಡೆಯುತ್ತಿದ್ದವು?
   a) ರಾಜ್ಯ ರಕ್ಷಣೆ b) ಸಾಹಸ ಮನೋವೃತ್ತಿ c) a) ಮತ್ತು b) d) ಯಾವುದು ಅಲ್ಲ

4. ಕವಿರಾಜ ಮಾರ್ಗದಲ್ಲಿ ಹೇಳಿರುವಂತೆ ಕನ್ನಡಿಗರು ಎಂತಹವರು?
   a) ಕೀರ್ತಿವಂತರು b) ಗುಣಶಾಲಿಗಳು c) ಸ್ವಾಭಿಮಾನಿಗಳು d) ಎಲ್ಲವೂ ಸರಿ

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5. "ನಿಘಂಟು ತಜ್ಞ" ಎಂದು ಹೆಸರಾದ ಕನ್ನಡದ ಲೇಖಕರು ಯಾರು?
a) ಪ್ರೊ.ಜಿ. ವೆಂಕಟಸುಬ್ಬಯ್ಯ
b) ಬಿ.ಎಂ.ಶ್ರೀ
c) ಕುವೆಂಪು
d) ಪು.ತಿ.ನ

6. "ಕರ್ನಾಟಕ ಗತವೈಭವ" ಕೃತಿಯನ್ನು ರಚಿಸಿದವರು ಯಾರು?
a) ಶ್ರೀರಂಗ
b) ಆಲೂರು ವೆಂಕಟರಾಯರು
c) ಮಾಸ್ತಿ ವಂಕಟೇಶ ಅಯ್ಯಂಗಾರ್
d) ಸಿದ್ದಯ್ಯ ಪುರಾಣಿಕ

7. ರಾಯಚೂರಿನಲ್ಲಿ 1955 ರಲ್ಲಿ ನಡೆದ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಸಮ್ಮೇಳನದ ಅಧ್ಯಕ್ಷರು ಯಾರು?
a) ಕೆ. ಎಸ್. ನರಸಿಂಹಸ್ವಾಮಿ
b) ಡ.ರಾ.ಬೇಂದ್ರೆ
c) ಶ್ರೀರಂಗ
d) ಡಿ.ವಿ.ಜಿ

8. ಕನ್ನಡ ಭಾಷೆಯನ್ನು ವಿವಿಧ ರೂಪಗಳಲ್ಲಿ ಸುಮಾರು ಎಷ್ಟು ಜನರು ಆಡುನುಡಿಯಾಗಿ ಬಳಸುತ್ತಿದ್ದಾರೆ?
a) 30 ದಶಲಕ್ಷ b) 40 ದಶಲಕ್ಷ c) 80 ದಶಲಕ್ಷ d) 60 ದಶಲಕ್ಷ

9. ವಿನೋಬಾ ಭಾವೆಯವರು ಕನ್ನಡ ಭಾಷೆಯ ಲಿಪಿಯನ್ನು ಏನೆಂದು ಕರೆದಿದ್ದಾರೆ?
a) ಲಿಪಿಗಳ ರಾಣಿ b) ಯುವರಾಣಿ c) ಯುವರಾಜ d) ಲಿಪಿಗಳ ರಾಜ

10. ಭಾಷೆಯ ಸಮ್ಮತವಾದ ನಿಯಮಗಳನ್ನು ತಿಳಿಸುವ ಶಾಸ್ತ್ರಕ್ಕೆ ಏನನ್ನುತ್ತಾರೆ?
a) ವಿಮರ್ಷೆ b) ವ್ಯಾಕರಣ c) ನಿಘಂಟು d) ಕಾಗುಣಿತ

11. ಶರಣ ಚಳವಳಿಯ ಪ್ರೇರಕ ಶಕ್ತಿ ಯಾರು?
a) ಬಸವಣ್ಣ b) ಬಿಜ್ಜಳ ಮಹಾರಾಜ c) ಅಲ್ಲಮಪ್ರಭು d) ಅಕ್ಕಮಹಾದೇವಿ

12. "ರಾಮನಾಥ" ಅಂಕಿತದೊಡನೆ ವಚನಗಳನ್ನು ರಚಿಸಿದ ವಚನಕಾರ ಯಾರು?
a) ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ b) ಜೇಡರದಾಸಿಮಯ್ಯ c) ಅಲ್ಲಮಪ್ರಭು d) ಆಯ್ದಕ್ಕಿ ಲಕ್ಕಮ್ಮ

13. ಅಕ್ಕಮಹಾದೇವಿಯ ವಚನಗಳ ಅಂಕಿತ ಯಾವುದು?
a) ಅಮರೇಶ್ವರ ಲಿಂಗ b) ಗುಹೇಶ್ವರ c) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ d) ಕೂಡಲಸಂಗಮದೇವ

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14. ಗುರು, ಲಿಂಗ ಮತ್ತು ಜಂಗಮ ಈ ಮೂರಕ್ಕಿಂತ ಯಾವುದು ಅತ್ಯಂತ ಶ್ರೇಷ್ಠವೆಂದು ಆಯ್ದಕ್ಕಿ ಮಾರಯ್ಯ ತನ್ನ ವಚನದಲ್ಲಿ ಹೇಳಿದ್ದಾರೆ?
a) ವಿದ್ಯ b) ದಾನ c) ಬುದ್ಧಿ d) ಕಾಯಕ

15. "ಅದರಿಂದೇನು ಫಲ, ಇದರಿಂದೇನು ಫಲ" ಈ ಕೀರ್ತನೆಯನ್ನು ರಚಿಸಿದವರು ಯಾರು?
a) ಪುರಂದರ ದಾಸರು b) ವಿಜಯದಾಸರು c) ಕನಕದಾಸರು d) ಗೋಪಾಲದಾಸರು

16. ಕನಕದಾಸರ ಆರಾಧ್ಯದೈವ ಯಾರು?
a) ಚೆನ್ನಕೇಶವ b) ಆದಿಕೇಶವ c) ಸೋಮೇಶ್ವರ d) ಪುರಂದರ ವಿಠಲ

17. ಹಲವು ಕಾಲ ಕಲ್ಲು ನೀರೊಳಗಿದ್ದರೆ ನೆನೆದು ಅದು ------ ಆಗುವುದೆ?
a) ಶಿಲಾಮಂದಿರ b) ತಕ್ಷಶಿಲೆ c) ಅಮೃತಶಿಲೆ d) ಯಾವುದು ಅಲ್ಲ

18. ನವಿಲಿಗೆ ------ ಬರೆದವರು ಯಾರು ಎಂದು ಕನಕದಾಸರು ತಮ್ಮ ಕೀರ್ತನೆಯಲ್ಲಿ ಕೇಳುತ್ತಾರೆ?
a) ಕುಡಿ b) ಚಿತ್ತಾರ c) ಬಣ್ಣ d) ಚಿತ್ರ

19. ಶಿಶುನಾಳ ಶರೀಫರು ತಮ್ಮ ತತ್ವಪದದಲ್ಲಿ ಮಣ್ಣನ್ನು ಯಾವುದಕ್ಕೆ ಹೋಲಿಸಿದ್ದಾರೆ?
a) ಚಿನ್ನ b) ಬೆಳ್ಳಿ c) ವಜ್ರ d) ತಾಮ್ರ

20. ಎಂತಹ ಬೆಂಕಿಯನ್ನು ಹಚ್ಚಿ ಕುಂಬಾರಕ್ಕಿ ಕೊಡಗಳ ಸುಡುತ್ತಾಳೆ ಎಂದು ಶರೀಫರು ಹೇಳುತ್ತಾರೆ?
a) ಆಚಾರ b) ಅರಿವು c) ಧ್ಯಾನ d) ಭಕ್ತಿ

21. ಹುಲ್ಲಾಗಿ ಬೆಟ್ಟದಡಿ, ಮನೆಗೆ ಏನಾಗು ಎಂದು ಕವಿ ಡಿ.ವಿ.ಜಿಯವರು ಹೇಳುತ್ತಾರೆ?
a) ಮಲ್ಲಿಗೆಯಾಗು b) ಕನಕಾಂಬರವಾಗು c) ಸೇವಂತಿಗೆಯಾಗು d) ಗುಲಾಬಿಯಾಗು

22. ನಗುವು ಸಹಜಧ ಧರ್ಮ, ನಗಿಸುವುದು ಎಂತಹ ಧರ್ಮ ಎಂದು ಕವಿ ಹೇಳುತ್ತಾರೆ?
a) ಅಂತರಂಗದ ಧರ್ಮ b) ಪರಧರ್ಮ c) ಬಹಿರಂಗದ ಧರ್ಮ d) ಯಾವುದು ಅಲ್ಲ

23. ಖುಷಿ ವಾಕ್ಯದೊಡನೆ ಯಾವ ಕಲೆ ಸೇರಿದರೆ ಜನಜೀವನ ಸುಖಕರವಾಗಿರುವುದೆಂದು ಕವಿ ಹೇಳುತ್ತಾರೆ?
a) ತಂತ್ರಜ್ಞಾನ b) ತಂತ್ರಾಂಶ c) ವಿಜ್ಞಾನ d) ಅಂತರ್ಜಾಲ

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24. ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಯಾವುದು ಡಿ.ವಿ.ಜಿ ಯವರ ಕಾವ್ಯ ಅಲ್ಲ?
a) ನಿವೇದನೆ b) ಉಮರನ ಒಸಗೆ c) ಕೇತಕಿವನ d) ಕೊಳಲು

25. ದ.ರಾ.ಬೇಂದ್ರೆಯವರ ಕಾವ್ಯನಾಮ ಏನು?
a) ಅಂಬಿಕಾತನಯದತ್ತ b) ಆನಂದಕಂದ c) ಕುವೆಂಪು d) ಶ್ರೀನಿವಾಸ

26. "ಕುರುಡು ಕಾಂಚಾಣ" ಎಂಬ ಪದ್ಯವನ್ನು ಬೇಂದ್ರೆಯವರ ಯಾವ ಕವನ ಸಂಕರಲನದಿಂದ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ?
a) ಅರಳುಮರಳು b) ನಾದಲೀಲೆ c) ಗರಿ d) ಸಖೀಗೀತ

27. ಅಂಗಡಿಯೊಳಗೆ ಕಾಂಚಾಣದ ಸದ್ದು ಹೇಗಿದೆ ಎಂದು ಕವಿ ಹೇಳುತ್ತಾರೆ?
a) ಗಣಣ b) ತನನ c) ಝಣ ಝಣ d) ತೋಂ ತೋಂ

28. ಕೆಳಗಿನ ಕೃತಿಗಳಲ್ಲಿ ಕುವೆಂಪು ಅವರ ಕಾದಂಬರಿಯನ್ನು ಗುರುತಿಸಿ.
a) ಚಿತ್ರಾಂಗದಾ b) ದುರ್ಗಾಸ್ತಮಾನ c) ಸಂಧ್ಯಾರಾಗ d) ಮಲೆಗಳಲ್ಲಿ ಮದುಮಗಳು

29. ಸರ್ವರಿಗೆ ಸಮಬಾಳು ! ಸರ್ವರಿಗೆ -------- ಎಂದು ಕವಿ ಕುವೆಂಪು ಹೇಳಿದ್ದಾರೆ?
a) ಸಮಪಾಲು ! b) ಸಹಬಾಳ್ವೆ ! c) ಸಮಾನ ಪಾಲು ! d) ಯಾವುದು ಅಲ್ಲ

30. "ವಿಪ್ಲವ" ಪದದ ಅರ್ಥವೇನು?
a) ಶಬ್ದಕೋಶ b) ಕ್ರಾಂತಿ c) ಚಿತ್ರ d) ವಿಶ್ವ

31. ಮಂಡ್ಯ ಜಿಲ್ಲೆಗೆ ನೀರನ್ನು ಒದಗಿಸುವ ಕೃಷ್ಣರಾಜಸಾಗರದ ಯೋಜನೆಯನ್ನು ತಯಾರಿಸಿದವರು ಯಾರು?
a) ಡಾ. ವಿಶ್ವೇಶ್ವರಯ್ಯ b) ಥಾಮಸ್ ಮನ್ರೊ c) ರಾ.ಹ.ದೇಶಪಾಂಡೆ d) ಯಾರು ಅಲ್ಲ.

32. ------ ಜಿಲ್ಲೆಯ ಸೌಂದರ್ಯದಲ್ಲಿ ವಿಶ್ವೇಶ್ವರಯ್ಯ ಜೀವಂತರಾಗಿದ್ದಾರೆ.
a) ದಕ್ಷಿಣ ಕನ್ನಡ b) ಮಂಡ್ಯ c) ರಾಮನಗರ d) ಚಿಕ್ಕಮಂಗಳೂರು

33. ಡಾ. ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಪ್ರವಾಸ ಹೊರಟಾಗ ಅವರ ಸೂಟ್ ಕೇಸಿನಲ್ಲಿ ಯಾವ ಪುಸ್ತಕದ ಪ್ರತಿಯನ್ನು ಇಟ್ಟುಕೊಳ್ಳುತ್ತಿದ್ದರು.
a) ವೇದ b) ಉಪನಿಷತ್ತು c) ಭಗವದ್ಗೀತೆ d) ರಾಮಾಯಣ

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34. ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಯಾವುದು ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಸ್ಥಾಪಿಸಿದ ಸಂಸ್ಥೆ
a) ಕಬ್ಬಿಣ ಮತ್ತು ಉಕ್ಕಿನ ಕಾರ್ಖಾನೆ, ಭದ್ರಾವತಿ
b) ಮೈಸೂರು ಬ್ಯಾಂಕ
c) ಮೈಸೂರು ವಿಶ್ವವಿದ್ಯಾಲಯ
d) ಎಲ್ಲವೂ ಸರಿ

35. "ಎಷ್ಟೊಂದು ಶಕ್ತಿ ಪೋಲಾಗುತ್ತಿದೆ" ಈ ಮಾತನ್ನು ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಯಾವ ಜಲಪಾತವನ್ನು ನೋಡಿ ಹೇಳಿದ್ದರು?
a) ಜೋಗ
b) ಶಿವನಸಮುದ್ರ
c) ಹೆಬ್ಬೆ
d) ಅರಶಿನ ಮಕ್ಕಿ

36. ಬಟ್ಟೆಗಳಿಗೆ ಬಣ್ಣಕಟ್ಟುವ ಕಲೆಗೆ ಏನೆಂದು ಹೆಸರು?
a) ಚರ್ಮಾರಿಕೆ
b) ಬಣ್ಣಗಾರಿಕೆ
c) ಹೈನುಗಾರಿಕೆ
d) ಮಾತುಗಾರಿಕೆ

37. ಭಾರತದಲ್ಲಿ ತಯಾರಾಗುತ್ತಿದ್ದ ಬಟ್ಟೆಗಳಿಗೆ ಕೆಳಗಿನ ಯಾವ ದೇಶದಲ್ಲಿ ಬೇಡಿಕೆ ಇತ್ತೆಂದು ಲೇಖಕರು ಹೇಳುತ್ತಾರೆ?
a) ಶ್ರೀಲಂಕಾ
b) ಪಾಕಿಸ್ತಾನ
c) ಗ್ರೀಸ್
d) ಯಾವುದು ಅಲ್ಲ

38. ಪರಿಸರದಲ್ಲಿ ಸಿಗುತ್ತಿದ್ದ ಕಚ್ಚಾ ವಸ್ತುಗಳ ಮುಖಾಂತರ ಕುಶಲಕರ್ಮಿಯ ------ ಪ್ರತಿಫಲಿತವಾಗುತ್ತಿತ್ತು ಎಂದು ಲೇಖಕರು ಹೇಳುತ್ತಾರೆ?
a) ಕೈಕೌಶಲ್ಯ
b) ನೈಪುಣ್ಯ
c) ಸೌಂದರ್ಯ ಪ್ರಜ್ಞೆ
d) ಎಲ್ಲವೂ ಸರಿ

39. ಸಾಂಪ್ರದಾಯಿಕ ಕರಕುಶಲ ಕಲೆಗಳ ಮೇಲೆ ಭಾರಿ ಪೆಟ್ಟು ಬಿದ್ದದ್ದು ಯಾವಾಗ?
a) ಕೈಗಾರಿಕಾ ಕ್ರಾಂತಿಯ ಪರಿಣಾಮ
b) ಯಂತ್ರಗಳ ಆವಿಷ್ಕಾರ
c) ಬೇಡಿಕೆ ಕಡಿಮೆಯಾದದ್ದು
d) ಯಾವುದೂ ಅಲ್ಲ

40. ಭಾರತದಲ್ಲಿ ಬೇರೆ ಬೇರೆ ಬಣ್ಣಗಳನ್ನು ನೀಡುವ ಸುಮಾರು ಎಷ್ಟು ಗಿಡಗಳಿವೆ ಎಂದು ಅಂದಾಜಿಸಲಾಗಿದೆ?
a) 100
b) 300
c) 200
d) 350

41. "ಯುಗಾದಿ" ಕಥೆಯನ್ನು ಬರೆದ ಕನ್ನಡದ ಲೇಖಕರು ಯಾರು?
a) ವಸುಧೇಂದ್ರ
b) ಪಿ.ಲಂಕೇಶ್
c) ವೈದೇಹಿ
d) ವಸುಂಧರಾ ಭೂಪತಿ

42 ಯುಗಾದಿ ಕಥೆಯಲ್ಲಿ ಚಿತ್ರಿತವಾಗಿರುವ ಹಿರಿಯಜೀವಿ ಗೋಪಣ್ಣನವರ ವೃತ್ತಿ ಏನು?
a) ವೈದ್ಯ
b) ಶಿಕ್ಷಕ
c) ಅಭಿಯಂತರ
d) ಗುಮಾಸ್ತ

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43. ಗೋಪಣ್ಣನವರ ಮಗ ಪ್ರಹ್ಲಾದ ಯಾವ ಪದವಿ ಪಡೆದ?

a) ಬಿ.ಎಸ್ಸಿ b) ವೈದ್ಯ c) ಇಂಜಿನಿಯರಿಂಗ್ d) ಬಿ.ಕಾಂ

44. ಗೋಪಣ್ಣ ಮಾಸ್ತರರನ್ನು ಭೇಟಿಯಾಗಲು ಊರಿನಿಂದ ಬಂದ ಅವರ ಗೆಳೆಯ ಯಾರು?

a) ಇಸ್ಮಾಯಿಲ್ b) ನಚಿಕೇತ c) ಸಾದಿಕ್ d) ಕಾಸಿಂಸಾಬರು

45. ಸರ್ಕಾರಿ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಗೋಪಣ್ಣ ಮಾಸ್ತರರನ್ನು ಗುರುತಿಸಿದ ಅವರ ಶಿಷ್ಯ ಯಾರು?

a) ರಾಧಾ b) ರುಕ್ಮಣಿ c) ರೇಖಾ d) ರೂಪಾ

46. ಡಾ.ಹಿ.ಚಿ.ಬೋರಲಿಂಗಯ್ಯ ಅವರ ಬುಡಕಟ್ಟು ಜೀವನವನ್ನು ಕುರಿತ ಕಾದಂಬರಿ ಯಾವುದು?

a) ಬುಡಕಟ್ಟು ದೈವಾರಾಧನೆ b) ಆನೆಕಾಡು

c) ಕಾಡು ಕಾಂಕ್ರೀಟ್ d) ಉಜ್ಜನಿ ಚೌಡಮ್ಮ

47. ಕಾಸಿಂಸಾಬರ ಮಗಳು

a) ಚಿತ್ರ b) ವಂದನಾ c) ಚಾಂದನಿ d) ತಸೀಮಾ

48. ಹಾಡುವಳ್ಳಿಯ ಹಿಂದಿನ ಹೆಸರೇನು?

a) ಸಂಸ್ಕೃತಿಪುರ b) ಸಾಹಿತ್ಯಪುರ c) ಸಂಗೀತನಗರ d) ಸಂಗೀತಪುರ

49. ಸಹ್ಯಾದ್ರಿ ಶ್ರೇಣಿಯ "ಮೆಗಾನೆ" ಎಂಬ ಹಳ್ಳಿಯಲ್ಲಿರುವ ಜನಾಂಗ ಯಾವುದು?

a) ಕುಣಬಿ b) ಗೊರವ c) ದೀವ d) ಗೊಂಡ

50. ಮಾರ್ಗದರ್ಶಕ ಕುಪ್ಪಯ್ಯ ಹೆಗಲಿಗೆ ಏನನ್ನು ಏರಿಸಿಕೊಂಡಿದ್ದ?

a) ಬಿಲ್ಲು b) ನಾಡಕೋವಿ c) ಶಲ್ಯ d) ಲಾಟೀನು

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CBCS SCHEME

USN | | | | | | | | | |

BKBKK107/207

Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

Balake Kannada

(COMMON TO ALL BRANCHES)

Time: 1 hrs.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions; each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Fill in the blanks with suitable words given:

1. niinu
   a) yaaru b) adu c) yaake d) avaru
2. adu _____ pustaka?
   a) yaara b) enu c) niivu d) avaru
3. idu _____ Kaaleju
   a) niivu b) avaru c) avaLa d) yaake
4. avaru _____ gurugaLu.
   a) enu b) yaake c) namma d) elli
5. _____ nanna Amma
   a) avaLu b) avanu c) yaake d) idu

Write appropriate words to fill the blank and make sentence meaningful.

6. idu _____ mane.
   a) enu b) avaLa c) huDuga d) yaake
7. naanu _____ bandenu.
   a) Kaalejige b) avana c) avara d) enu
8. niivu _____ hoguttiddira?
   a) ellige b) enu c) avara d) avana

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9. ivaru _____ akka.
a) nanna b) naNNa c) enu d) Nanna

10. adu yaara _____.
a) Mane b) mane c) enu d) nanna

Change the word as per the model:
(Ex : doDDa + avanu = doDDavanu)

11. SaNNa _____.
a) sannavanu b) saNNavanu c) SaNNavaNu d) SANNAVANu

12. Chikka _____
a) ChikkavaLu b) Chikkavanu c) CHIkkavanu d) CiKKaVNu

13. KeTTa
a) kettavanu b) KeTTavanu c) KeTTavaNu d) KettavaNu

14. ettara
a) ettaradavanu b) ettaravanu c) Ettaradavanu d) ETTaradavanu

15. mane
a) maneyavanu b) Maneyavanu c) ManeYavanu d) maneyavaNu

Transform the following words of Kannada as per the given model.
(SaNNa - SaNNadu)

16. DoDDa _____
a) DoDDadu b) doDDadu c) doddadu d) DODDADU

17. avara _____
a) avaradu b) Avaradu c) avaraDu d) AVARADU

18. namma _____
a) nammadu b) NammaDu c) nammaDu d) NaMMaDu

19. hoSa _____
a) hoSadu b) Hosadu c) HoSaDu d) hoSaDu

20. avaLa _____
a) avaLadu b) AvaLadu c) avaladu d) avanadu

Transform the following words of Kannada as per the given model:
(mane – maneyalli)

21. raSte _____
a) raSteyalli b) Rasteyalli c) RasTeyalli d) raSteYalli

22. pustaka _____
a) pustakadalli b) pustakaDalli c) Pustakadalli d) PUSTAKADalli

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23. angaDi _____
a) angaDiyalli b) Angadiyalli c) angadiyalli d) angaDiyalli

24. byag _____
a) byaginalli b) byagiNalli c) byagalli d) byaGalli

25. daari
a) daariyalli b) daariYalli c) daarinalli d) Daariyalli

Fill in the blanks with suitable words to make the sentence meaningful:

26. avaLu nimma _____
a) akka b) Akka c) anna d) tamma

27. avara _____ yaavudu?
a) aane b) mane c) MANE d) Mane

28. nimma hesaru _____?
a) enu b) yavadu c) yaake d) Enu

29. avaLu nanna _____
a) snehite b) snehita c) geleya d) huDuga

30. Kaalejige hoguva _____ yaavadu?
a) Daari b) daari c) DAARI d) DaaRi

Change the word as per the model given:
(KuDi – KuDiyiri)

31. tinni _____
a) tinniri b) tinniyiri c) tindiri d) tandiri

32. ese _____
a) eseyiri b) eseiyiri c) Eseyiri d) eseiri

33. nuDi _____
a) nuDiyiri b) Nudisiri c) NUDIYIRI d) nudiyiri

34. Savi _____
a) Saviyiri b) Savida c) Satya d) Sullu

35. mare _____
a) mareyiri b) Kareyiri c) MAREYIRI d) Mariri

Fill in the blanks using the correct form of the Kannada word to make sentence meaningful one.

36. niinu _____ (who)
a) yaaru b) Yaaru c) YAARu d) yaru

37. indu _____ uurige hogoNavaa? (we)
a) naavu b) Naavu c) NAAvu d) Naau

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38. idu _____ pustaka. (her)
a) avaLa b) avana c) avara d) nanna

39. _____ nanna snehita. (He)
a) AvaLu b) Avanu c) Avara d) Namma

40. indu _____ Kaalejige baruttiyaa? (You)
a) niinu b) Ninu c) neenu d) Neenu

Transform the following words into Kannada as per the model: (ondu – ondaneya)

41. eradu _____
a) eradaneya b) ondaneya c) HattaNeya d) Mooraneya

42. muuru _____
a) muuraneya b) Muraneya c) MuuRaneya d) MUURANEYa

43. Aidu _____
a) aidaneya b) Aidaneya c) aiduaneya d) AIDANEya

44. aaru _____
a) aaraneya b) aaraneYa c) Araneya d) AAraneya

45. enTu _____
a) enTaneya b) Entaneya c) entaneya d) EnTaneya

Translate following words as per model: (iru – irutteve)

46. baru _____
a) barutteve b) Barutteve c) Bartivi d) bartivi

47. hogu _____
a) hogutteve b) hoguTTeve c) Hogutteve d) HOGUTTEVE

48. tinnu _____
a) tinnutteve b) Tinnutteve c) TinnuTTeve d) TINNUTTEVE

49. KoDu _____
a) Kodutteve b) KoDutteve c) KoDUtteve d) KODUTTEVE

50. maadu _____
a) maadutteve b) maaduTTeve c) maaDutteve d) maaDuTTeve

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CBCS SCHEME

BSFHK158/258

USN | | | | | | | | | | |

Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Scientific Foundation of Health

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Being inactive form of life style is called as _____
   a) Sedentary life style b) Spirited life style
   c) Busy life style d) Lively
2. A person who is able to serve himself , his nation and his community is called as?
   a) Gangster b) Sick person c) Healthy d) Saddest
3. Balance in exercise , balanced nutrition and adequate rest is referred as
   a) Social health b) Physical health c) Emotional health d) Intectual health
4. Individual who do not think they will get flue are less likely to get a yearly flue short is an example of_____
   a) Negative belief b) Uncertainity c) Healthy belief d) None of the above
5. Emotional health brings an ability in individual to____
   a) React to the situation b) Respond to the situation
   c) Withdraw from the situation d) None of the above
6. A person has ability to bounce back after difficult experiences and adapt to adversity is called as ____ health.
   a) Mental health b) Financial health c) Social health d) Physical health
7. The prime factor which influences psychological health is _____
   a) Positive mindset b) Gloomy outlook c) Dim view d) All the above
8. One who suffer from mental illness always see himself as
   a) Happy and Active b) Gloomy & Pessimist
   c) Unhappy and Worried d) Both (b) & (c)
9. Spiritual wellness involves
   a) Developing compassion, caring and forgiving
   b) Peace of mind, happiness and mercy full
   c) Human values, honesty and self realization d) All the above

10. Lack of physical health for longer time affects
    a) Productivity and performance of Individual
    b) Financial health of individual
    c) Mental health of individual
    d) All the above

11. An increased intake of energy dense foods that are high in fat and sugar leads to ____
    a) Cancer
    b) Obesity and overweight
    c) Brain hemorrhage
    d) Visual disability

12. Mindfulness of eating means
    a) Chewing food
    b) Enjoying food
    c) Creating positive vibration to food
    d) Both (b) & (c)

13. What should be the proper proportion of fats in every meal?
    a) Equal to carbohydrates, vitamins and minerals
    b) Greater than carbohydrates, vitamins and minerals
    c) Less than carbohydrates, vitamins and minerals
    d) None of the above

14. Anorexia nervosa, Bulimia nervosa and Binge eaters are belongs to _____
    a) Eating disorders
    b) Breathing disorders
    c) Sleeping disorders
    d) All the above

15. The fundamental cause of obesity and over weight is
    a) Balance in calori intake and calori spent
    b) Imbalance in calori intake and calori spent
    c) Calori spent is more than calories consumed
    d) None of the above

16. Excessive intake of nutrients which creates a stress on bodily function called as ___
    a) Malnutrition
    b) Over nutrition
    c) Modified nutrition
    d) Moderate nutrition

17. Which of the following is Non Communicable Diseases (NCD's)?
    a) Stroke b) Cold c) Cough d) Fever

18. The following is an example for saturated fat
    a) Pork b) Chicken c) Butter d) Cheese

19. Excess of BMI (Body Mass Index) in a person leads to
    a) Cancer b) Obesity c) Sugar d) Weight loss

20. Physical fitness in an index of
    a) Perfect height & weight ratio
    b) Perfect body structure
    c) Perfect body composition
    d) All the above

21. Which of the following is behavioral addiction?
    a) Nicotine b) Alcohol c) Drugs d) Gambling

22. The key strand to overcome from addiction
    a) Stop using substances
    b) A powerful and positive mindset
    c) Poverty
    d) None of the above

23. Which of the following statement is true :
    a) Addiction leads to physical disorders which in turn leads to mental disorder
    b) Addiction which affects only physical health
    c) Addiction which affects only mental health
    d) All the above

24. A major effect and health hazards from substance addiction is _____
a) Loss of self control b) Injury
c) Cardio vascular disorder d) Fetal damage

25. Addiction not only impairs a range of bodily function but also changes the way a person thinks is referred as _____
a) Physiological complication b) Psychological complication
c) Biological complication d) None of the above

26. _____ is an example for substance addiction.
a) Shopping b) Video games c) Tobacco d) Using internet

27. Depression, Anxiety , Loneliness are the effects of
a) Substance addiction b) Behaviour addiction
c) Both (a) & (b) d) None of the above

28. What is SUD stands in addiction?
a) Subjective unit of distress b) Substance unit of distress
c) Substance use disorder d) None of the above

29. The purpose of using drugs are
a) To detoxify the body
b) To feel high pleasure, relieve stress , forget problems
c) To boost physical health d) All the above

30. Addiction not only damages physical and mental health but also affects _____
a) Relationships & Financial status b) Only friend circle
c) Only economic status d) None of the above

31. A good listener is the one who
a) Non judgmental b) More talkative
c) Make uncomfortable d) Create stress

32. The value of good relationship depends on
a) Self care b) Mutual respect
c) Mutual money exchange d) None of the above

33. The art of transmitting information , ideas and attitudes from one person to another is referred as _____
a) Tradition b) Obstruction c) Communication d) None of the above

34. Goals of Communication are
a) Sending and receiving of information
b) Inform, to persuade and to build relationships
c) Encode and decoding of information d) All the above

35. One of the step to increase vocal clarity is _____
a) Slow down the conversation b) Fasten the conversation
c) Stop the conversation d) None of the above

36. Communication is the key to healthy relationships because it
a) Avoid misunderstanding b) Create misunderstanding
c) Brings expectation d) None of the above

37. "Wearing seat belt while driving" is an example for
a) Unhealthy behavior through social engineering
b) Healthy behavior through social engineering
c) Social responsibility
d) Both (b) & (c)

38. _____ influence people mindset to both positive and negative.
a) Social gathering b) Travelling c) Media d) All the above

39. Dress code of individual is an example of _____ communication.
a) Spoken b) Verbal c) Non - verbal d) None of the above

40. An unhealthy relationship cause _____
a) Lot of stress
b) Trust in each other
c) Harmony in each other
d) All the above

41. How to maintain better quality of life in chronic illness?
a) Good medical advice, living healthy life style and negative mindset.
b) Good medical advice and positive mindset
c) Good medical advice and living healthy life style.
d) Good medical advice, living healthy life style and positive mindset.

42. The disease which cannot be cured but it can be managed is called as
a) Acute illness b) Infection disease c) Chronic illness d) Allergy

43. The following is an example for chronic disease :
a) Diabetes b) Cold c) Cough d) Head ache

44. Following are the measures required in maintaining Quality of life in chronically ill state.
a) Emotional support
b) Understanding the medication
c) Reliable information about diseases, its treatment and management
d) All the above

45. The following are the steps to avoid transmitted infections :
a) Good hygiene b) Vaccinations c) Temperature d) Both (a) & (b)

46. Virus, Bacteria, Fungus are means of transmission of _____ disease.
a) Infection b) Cancer c) Stroke d) Obesity

47. Health compromising behavior are commonly seen in _____ class of people.
a) High b) Middle c) Low d) None of these

48. Which of the following health communication style makes use of the patients knowledge and experience?
a) Doctor – centered communication
b) Patient – centered communication
c) Practitioner – centered communication
d) None of these

49. Health has intimacy with _____
a) Behaviour b) Society c) Personality d) All the above

50. What is a sign of toxic friendship?
a) Lack of empathy b) Understanding c) Being supportive d) None of these

* * * * *

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CBCS SCHEME

USN | | | | | | | | | | |

BPHYS102/BPHYS202

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Applied Physics for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. *Answer any FIVE full questions, choosing ONE full question from each module.*
2. *Draw neat sketches where ever necessary.*
3. *VTU Formula Hand Book is permitted.*
4. *M : Marks , L: Bloom's level , C: Course outcomes.*
5. *Constants: Speed of Light C = 3 × 10^8 m/s, Boltzmam const. K = 1.38×10^-23 J/K^-1, Planck's const h = 6.625 × 10^-34 JS, Acceleration due to gravity g = 9.8m/s^-2, Permittivity of Free space ϵ_0 = 8.854×10^-12 Fm^-1*

		Module – 1	M	L	C
Q.1	a.	Define LASER and explain the interaction of radiation with matter for the induced absorption, spontaneous emission and stimulated emission.	7	L1	CO1
	b.	Discuss different types optical fibers based on modes of propagation and refractive index profile.	9	L2	CO1
	c.	Find attenuation in an optical fiber of length 500m, when a light signal of power 100mW emerges out of the fiber with a power of 90mW.	4	L3	CO1
		OR			
Q.2	a.	Obtain the expression for energy density of radiation using Einstein's co-efficient A and B and thus conclude $B_{12} = B_{21}$.	9	L2	CO1
	b.	Discuss point to point communication using optical fiber.	6	L2	CO1
	c.	In a diffraction grating experiment the LASER light undergoes second order diffraction for diffraction angle 1.48°. The grating constant d = 5.05 × 10^-5 m and the distance between the grating and source is 0.60m, find the wavelength of LASER light.	5	L3	CO5
		Module – 2			
Q.3	a.	State and explain Heisenberg's uncertainty principle. Using the principle show that electron doesn't exist inside the nucleus.	7	L2	CO2
	b.	Set up Schrodinger's time independent wave equation in one dimension.	8	L2	CO2
	c.	A particle of mass 0.5 MeV/C^2 has kinetic energy 100 eV. Find its de-Broglie wavelength where 'C' is the velocity of light.	5	L3	CO2
		OR			
Q.4	a.	Find the Eigen values and Eigen functions for a particle in one dimensional infinite potential well.	9	L2	CO2
	b.	Discuss de-Broglie hypothesis.	6	L2	CO2
	c.	Calculate the energy of the first three states for an electron in one dimensional potential well of width 1A°.	5	L3	CO2

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		Module – 3			
Q.5	**a.**	Explain the representation of qubit using Bloch sphere.	**6**	**L2**	**CO2**
	b.	Discuss CNOT gate, matrix representation and its operation on four different input states.	**6**	**L2**	**CO2**
	c.	A linear operator X operates such that $X\|0\rangle = \|1\rangle$ and $X\|1\rangle = \|0\rangle$. Find the matrix representation of X	**8**	**L3**	**CO2**
		OR			
Q.6	**a.**	State the Pauli's metrics and apply Pauli matrices on the states $\|0\rangle$ and $\|1\rangle$ states.	**8**	**L3**	**CO2**
	b.	Elucidate the differences between classical and quantum computing.	**6**	**L2**	**CO2**
	c.	Explain matrix representation of 0 and 1 states and apply identify operator I to $\|0\rangle$ and $\|1\rangle$ states.	**6**	**L3**	**CO2**
		Module – 4			
Q.7	**a.**	Enumerate the failures of Classical Free Electron [CFET] Theory and mention the assumptions of Quantum Free Electron Theory [QFET]	**7**	**L2**	**CO3**
	b.	Describe Meissner's effect. Distinguish between Type I and Type II super conductors.	**8**	**L2**	**CO3**
	c.	Lead has a superconducting transition temperature of 7.26K. If initial field at 0K is $50 \times 10^3 Am^{-1}$, calculate the critical field at 6K.	**5**	**L3**	**CO3**
		OR			
Q.8	**a.**	Define Fermi factor. Discuss the variation of Fermi factor with temperature and energy.	**7**	**L2**	**CO3**
	b.	Explain the phenomenon of super conductivity. Discuss qualitatively BCS theory of super conductivity.	**8**	**L2**	**CO3**
	c.	Calculate the probability of occupation of an energy level 0.02eV above Fermi level at temperature 200K.	**5**	**L3**	**CO3**
		Module – 5			
Q.9	**a.**	Discuss timing in linear motion, uniform motion, slow in and slow out.	**8**	**L2**	**CO4**
	b.	Enumerate the difference between inferential and descriptive statistics.	**6**	**L2**	**CO4**
	c.	In an optical fiber experiment, the light passing through the fiber, made a spot diameter of 8mm on the screen. The distance between the end of the optical fiber cable and the screen is 0.031m. Calculate the angle of acceptance and numerical aperture of given optical fiber.	**6**	**L3**	**CO5**
		OR			
Q.10	**a.**	Describe Jumping and parts of Jump.	**8**	**L2**	**CO4**
	b.	Discuss the salient features of Normal distribution using Bell curves.	**7**	**L2**	**CO4**
	c.	While animating speeding up car animation, the total distance covered over 6 frames is 25m. Calculate the base distance.	**5**	**L3**	**CO4**

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CBCS SCHEME

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BPOPS103/203

First/Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Principles of Programming Using C

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	a.	Define a Computer. Explain the characteristics of a digital computer.	10	L1	CO1
	b.	Explain the basic structure of a C program with a neat diagram.	10	L1	CO1
		OR			
Q.2	a.	With a neat diagram explain the steps in the execution of C program.	10	L1	CO1
	b.	Explain the input and output statements in C with examples for each.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain the various operators in C.	10	L2	CO1
	b.	Explain the different forms of if statement with flowcharts.	10	L1	CO2
		OR			
Q.4	a.	Explain the switch statement with an example.	10	L2 L3	CO2
	b.	Explain break and continue statements with examples for each.	04	L2 L3	CO2
	c.	Write a C program to find the largest of 3 numbers using nested if statement.	06	L3	CO2
		Module – 3			
Q.5	a.	Discuss in detail the parts of a user-defined function.	10	L2	CO3
	b.	Discuss the storage classes in C.	10	L2	CO3
		OR			
Q.6	a.	Define recursion. Write a C program to find the factorial of 'n' using recursion.	05	L1 L3	CO3
	b.	What is an array? Explain the declaration and initialization of 1-D arrays.	05	L1 L2	CO3
	c.	Write a C program to perform Matrix Multiplication.	10	L3	CO3
		Module – 4			
Q.7	a.	Write functions to implement string operations such as compare concatenate and string length. Convince the parameter passing techniques.	10	L3	CO4
	b.	Develop a program using pointers to compute, sum, mean and standard deviation of all the elements stored in an array.	10	L3	CO4
		OR			
Q.8	a.	Define a pointer. Discuss the declaration of pointer variables.	05	L2	CO4
	b.	Discuss the various string handling functions in C.	10	L2	CO4
	c.	Write a C program to swap two numbers using call by reference technique.	05	L3	CO4
		Module – 5			
Q.9	a.	Define a structure. Explain the types of structure declarations with examples for each.	10	L1	CO4
	b.	Implement structures to read, write and compute average marks and the students scoring below and above average in a class of 'N' students.	10	L3	CO4
		OR			
Q.10	a.	Differentiate between structures and union.	06	L2	CO5
	b.	Define a structure by name DOB consisting of three members dd, mm and yy. Develop a C program that would read values to the individual member and display the date in the form dd/mm/yyyy.	06	L3	CO5
	c.	Explain the various file operations with syntax for each.	08	L2	CO5

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CBCS SCHEME

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BETCK105E/BETCKE105

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024
Renewable Energy Sources

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Briefly explain the principles of renewable energy, energy and sustainable development, fundamental and social implication of renewable energy.	10	L2	CO1
	b.	Briefly describe biomass energy and Internet of energy.	10	L2	CO1
		OR			
Q.2	a.	Briefly describe energies from ocean.	10	L2	CO1
	b.	Briefly describe geothermal energy and solar energy.	10	L2	CO1
		Module – 2			
Q.3	a.	Explain solar radiation and its estimation on horizontal and inclined surfaces.	10	L2	CO2
	b.	With neat sketches, explain the working principles of Pyranometer and Pyreheliometer.	10	L2	CO2
		OR			
Q.4	a.	Explain solar pond and solar distillation.	10	L2	CO2
	b.	Explain the principle of photovoltaic system with applications.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain with a neat block diagram, the basic components of Wind Energy Conversion System (WECS) specifying the components of a wind turbine.	10	L2	CO3
	b.	Stating advantages and disadvantages, elaborate in detail, the working principle of a horizontal axis wind turbines.	10	L2	CO3
		OR			
Q.6	a.	Elaborate on photosynthesis process.	6	L2	CO3

	b.	Explain biomass conversion technologies.	8	L2	CO3
	c.	Explain with a neat sketch, downdraft garifier.	6	L2	CO3
		Module – 4			
Q.7	a.	Explain with sketches, working of single and double basin tidal power plants.	10	L2	CO4
	b.	Summarize the advantages and limitation of tidal power generation.	10	L2	CO4
		OR			
Q.8	a.	Explain with sketches, working principles of open and closed cycle Ocean Thermal Energy Conversion (OTEC) system.	10	L2	CO4
	b.	What are the problems associated with OTEC?	10	L2	CO4
		Module – 5			
Q.9	a.	Classify fuel cells and explain the working of hydrox (H_2, O_2) fuel cell.	10	L2	CO5
	b.	Describe in detail about hydrogen energy storage and applications.	10	L2	CO5
		OR			
Q.10	a.	Explain with a sketch, electrolysis method used for hydrogen energy production.	10	L2	CO5
	b.	Discuss the problems associated with hydrogen energy.	10	L2	CO5

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CBCS SCHEME

BENGK106/BENGK206/22BD17

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Question Paper Version : B

First/Second Semester B.E./B.Tech./B.Ds. Degree Examination, Dec.2023/Jan.202

Communicative English

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Read Comprehension : Read the passage carefully and select the suitable answer from the given options :

Quite recently India laid the foundation stone for one of its most sought – after projects running a Bullet Train. It was very well considered as a dream project of the Honorable Prime Minister. Entire India felt proud of having its first ever bullet train scheduled to run between Mumbai and Ahmedabad, a distance of 508 km in about 2 hours 35 minutes. In his own words, "To grow, one needs to expand one's dreams and decide one's strength to achieve that. It's the New India which has to fly high". "Bullet Train is a project that will provide pace to development. Along with new technology, it will also bring results faster", he added. According to Achal Khare, the Managing Director of the National High speed Rail Corporation, the project would be completed by December 2005.

1. The _____ for the Bullet Train project was laid recently.
   a) railway track b) signaling system c) foundation stone d) None of these
2. The bullet train will take about _____ to run between both the States.
   a) 3 hrs, 25 min b) 2 hr, 55 min c) 2 hr, 35 min d) None of these
3. According to Prime Minister, the two benefits that the bullet train will bring are to provide pace to _____ to faster _____.
   a) travel , trains b) train, travel, results
   c) development, trains d) development, results
4. The bullet train schedule to run between _____ and _____
   a) Mumbai and Ahmedabad b) Mumbai and Delhi
   c) Mumbai and Gujarat d) None of these
5. The project is expected to be _____ by December 2023.
   a) completed b) operationalised c) started d) None of these

Choose the correct option :

6. _____ was visible at this late hour.
   a) No man b) No c) No men d) None of these

7. The tycoon had expired before the _____
   a) Physician arrives b) Physician arriving
   c) Physician arrived d) Physician had arrived

8. When _____, I will tell him everything.
   a) he is coming b) he comes c) he will come d) None of the above

9. Which of these must be avoided in Presentation?
   a) Proper grammar b) Complex words c) Short sentence d) Clear voice

10. Which of these can be used to break the monotony in a speech?
    a) Humour b) Constant tone c) Low voice d) Sad story

11. Mother tongue influence can be effectively minimized in the classroom by _____
    a) using the mother tongue more often b) giving examples from the mother tongue
    c) giving a lot of exposure in the target language
    d) giving inputs from the target language in a simple graded manner.

12. The art of clear and concise manner of speaking, with clarity of meaning and thought called _____
    a) Elocution b) Latency c) Extempore d) Story telling

Fill in the banks with appropriate prefixes :

13. The army people _____ attacked the enemy.
    a) in - b) Inter c) Counter d) Un

14. My research Supervisor is _____ critical about everything.
    a) hyper b) un c) mono d) intra

Choose the pairs of word / phrases :

15. Archive : Document
    a) Warehouse : merchandise b) Library : Shelves
    c) Theater : Plays d) Cinema : Projector

16. Coal : Mineral
    a) Oxygen : Water b) river : dam c) gold : metal d) silver : mine

Choose the correct subject – verb concord in the sentences :

17. Diabetes _____ a silent killer.
    a) is b) are c) were d) None of these

18. The Jury gave _____ verdict in an unbiased manner.
    a) their b) them c) its d) None of these

Complete the sentence with appropriate tense from :

19. Sir, I _____ passed my B.Tech in 2003
    a) have b) has c) was d) Not required

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20. We _____ finished our assignment just now.
a) have b) has c) had d) None of these

21. 'Communication' The word originates from Laten word
a) Communicm b) Communico c) Communicative d) None of these

22. Communication is a _____ process.
a) one way b) two - way c) three - way d) None of these

23. In order to achieve the production target for a particular month, the discussion held between the production manager and supply manager will certainly be a perfect instance of _____ Communication.
a) Vertical b) Spiral c) Cross wises d) Horizontal

24. 'Poor Printing' it is a type of Barrier____
a) Verbal barrier b) Psychological barrier
c) Physiological barrier d) Physical barrier

25. 'Transcendental meditation' is example of _____ Communication.
a) Extrapersonal b) Interpersonal c) Intrapersonal d) Non - verbal

26. The most straight forward, basic interpersonal communication meaning is _____ Communication.
a) Mass Communication b) Interpersonal
c) Extrapersonal d) None of these

27. Flashing eyes, avoiding eye contact may also cause _____ to effective Communication.
a) Vernal barrier b) Listening barrier
c) Psychological barrier d) Non – Verbal barrier

28. In general oral Communication is the interchange of _____ between the sender and the receiver.
a) cues and clues b) speaking c) gestures d) verbal messages

29. 'Follows a set pattern such as sequence of elements in a report' this is _____ Communication.
a) Professional b) General c) Personal d) None of these

30. In Organizations, informal communication also permeates. This informal communication is called _____
a) Personal b) Professional c) Grapevine d) None of thee

31. One native regional accent that has gained social prestige is the _____ of English.
a) Received pronunciation b) Reverse perception
c) Transcription d) None of these

32. A vowel sound whose quality does not change over the duration of the vowel is called_____
a) Vowel b) Diphthong c) Pure vowel d) Consonant

33. The consonant sounds that come before vowel sound are called _____
a) Coda b) Onset c) Medical d) None of these

34. What is the division of syllables of word 'Information'?
a) in-form-ation b) inform-ation c) in-formation d) in - for - ma - tion

35. Transcribe the word 'daughter'.
a) / 'dɔ : t ə / b) / dɔ 't ə / c) / dɔ : tr / d) / d 3 : t ə /

36. 'No, The women with the plastic bag'. In this sentence which words are having falling tone?
a) No, The woman b) Plastic bag c) No. bag d) None of these

37. Find the silent letter in the word 'though'
a) th b) ou c) ugh d) gh

38. In the word 'Sheep' often mispronounced sound is
a) / ʃ / b) / S / c) ee d) p

39. Correct the spelling of the following word :
a) Renumeration b) Remuneration c) Remunation d) Remuration

40. How to pronounce the word 'Next'?
a) nekast b) nekest c) nekist d) nekst

41. I have _____ to buy a car. (Use appropriate noun)
a) no rupees b) no notes c) no money d) no moneys

42. _____ and _____ want to purchase a yacht. (fill with suitable pronoun).
a) He. I and you b) You, he and I c) I, he and you d) You, I and he

43. The flower smells _____ (Appropriate Adjective is)
a) sweet b) sweetly c) sweeter d) sweetest

44. It is _____ hotter today, (place an adverb).
a) most b) very c) more d) much

45. Hardly had he arrived _____ the portico crumbled. (Choose correct conjunction)
a) than b) then c) when d) None of these

46. We could barely do anything, (suitable question Tag).
a) Couldn't we? b) Could we? c) Can we? d) None of these

47. A Person who believes in God, we call him
a) Theist b) Atheist c) Eccentric d) Spinster

48. 'I saw a man' in this sentence which is pronounced with a weak verb, without any special emphasis.
a) I b) man c) saw d) a

49. Flour is made _____ wheat. (suitable preposition)
a) of b) by c) from d) in

50. _____ Humanity is in danger. (Choose the correct option).
a) A b) An c) The d) Not needed any article

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CBCS SCHEME

BICOK107/207

USN | | | | | | | | | | |

Question Paper Version : A

First/Second Semester B.E. Degree Examination, Dec.2023/Jan.2024
Indian Constitution

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. The idea of a Constituent Assembly for India was put forwarded by
   a) B.G. Tilak b) M. K. Gandhi c) M. N. Roy d) Motilal Nehru

2. In Which year, did the Indian National Congress for the first time demand a Constituent Assembly?
   a) 1934 b) 1935 c) 1936 d) 1937

3. First time Constituent Assembly Constituted under the scheme formulated by the _____
   a) Cabinet Mission Plan b) Mount Batten Plan
   c) Non – Cooperation Movement d) None of these

4. Members of the Constituent Assembly were____
   a) All Elected b) All Nominated
   c) Partly elected and partly nominated d) Selected

5. Constituent Assembly hold its first meeting on _____
   a) Nov. 9, 1946 b) Dec. 9, 1946 c) Nov. 9, 1947 d) Dec. 9, 1947

6. When did "Objective Resolution" was adopted by the Constituent Assembly?
   a) 1946 b) 1948 c) 1947 d) 1950

7. First Draft of the Constitution was published on
   a) Jan. 24, 1950 b) Jan. 24, 1948 c) Aug. 15, 1947 d) Feb. 1948

8. Drafting Committee had _____ number of members.
   a) 10 b) 15 c) 07 d) 05

9. Provincial Constitution Committee was head by _____
   a) Dr. Rajendra Prasad b) Dr. B. R. Ambedkar
   c) Sardar Vallabhai Bhai Patel d) Jawaharlal Nehru

10. The concept of "A Union of States" in the Indian Constitution has been derived from
    a) The American Declaration b) The Australian Constitution
    c) The British North American Act d) The Swiss Constitution

11. India can make its own laws because, India is
a) Independent b) Sovereign c) Secular d) Democratic

12. Preamble is
a) Part of the Constitution b) Amendable part
c) Non – Amendable d) Both 'a' and 'c'

13. Fundamental Rights are _____
a) Enforceable b) Absolute c) Extraterritorial d) None of these

14. "Rights are not only the privileges, they are the weapons in hands of citizens to control the Arbitrary Government" – who gave this statement?
a) Dr. Baby Rajendra Prasad b) S.V. Patel
c) J. L. Nehru d) Dr. B. R. Ambedkar

15. The Preamble to the Constitution declares India as _____
a) Sovereign , Democratic , Republic
b) Sovereign, Socialist, Secular, Democratic, Republic
c) Socialist , Democratic , Republic
d) Sovereign , Democratic , Republic , Secular.

16. The Preamble aims to secure _____
a) Fundamental Rights b) Fundamental Duties
c) Dignity of the Individual d) Security of the People

17. Freedom to form an Assembly can be restricted on the ground
a) Public order b) Morality c) Health d) Wealth

18. Fundamental Rights are not applicable to
a) Foreigner b) Criminals
c) Members of Armed Forces d) Both 'a' & 'c'

19. For enforcement of Fundamental Rights Supreme Court can issue
a) An order b) Direction c) Writs d) All the these

20. Provisions of Art. 20 applicable only in
a) Criminal cases b) Civil cases c) Administrative cases d) Military cases

21. It is a law passed to give effect to directive principles of State Policy.
a) Equal Pay for Equal Work Act b) Right to Information Act
c) Juvenile Delinquency Act d) Passport Act

22. Fundamental Duties are _____
a) Enforceable b) Absolute c) Restricted d) Non - enforceable

23. Free Legal Aid is applicable to
a) APL Families b) Financial Incapable Persons
c) NRI Families d) CPI Families

24. It shall be duty of the every Citizen of India
a) Value our Culture b) Renounce Foreign Culture
c) Impose our Culture d) Preserve Western Culture

25. Fundamental Rights and Directive Principles are
a) Complementary to each other
b) Opposite to each other
c) Extension to each other
d) None of these

26. All the Executive powers of Union shall vest with
a) The Prime Minister b) The President c) The Parliament d) The People

27. Who is Competent Authority in India to declare War?
a) Defense Minister b) Prime Minister c) Chief of the Army d) President

28. Union Legislature shall be _____
a) Bi Cameral b) Uni Cameral c) Tri Cameral d) Any Cameral

29. There shall not be more than _____ gap between two sessions of the Parliament.
a) 6 months b) 6 weeks c) 6 days d) 6 years

30. The Prime Minister is _____
a) Elected b) Appointed c) Nominated d) Both (a) & (b)

31. Maximum strength of the Lok – Sabha is
a) 550 b) 550 + 2 c) 545 d) 600

32. Which House of the Parliament is known as Elders and Knowledge House?
a) Lok - Sabha b) Raj - Sabha c) Both d) None of these

33. How many time is President can return the Bill for consideration to Parliament?
a) Once
b) Twice
c) Thrice
d) Any number of times

34. Which of the following non – member of Parliament has the right to address it?
a) Auditor General of India
b) Chief Justice of India
c) Attorney General of India
d) Chief Election Commissioner

35. Sovereignity of Indian Parliament is restricted by
a) Powers of the President
b) Judicial Review
c) Leader of the opposition
d) Power of the Prime - Minister

36. Which one of the following Bills must be passed by each House of the Indian Parliament separately by special majority?
a) Ordinary Bill
b) Money Bill
c) Finance Bill
d) Constitutional Amendment Bill

37. To be recognized as an official opposition party in the Parliament, how many seats should it have to win?
a) $1/3^{rd}$ of total strength
b) $1/4^{th}$ of total strength
c) $1/10^{th}$ of total strength
d) $1/6^{th}$ of total strength

38. This is not the Committee of the Parliament.
a) Standing Committee
b) Public Account Committee
c) Estimates Committee
d) Welfare of Minorities

39. The Salary of the President and Vice – President is charged on
a) Contingency Fund b) P.M's Fund
c) Parliament Fund d) Consolidated Fund

40. The Parliament of India exercises control over the functions of the Council of Ministers through
a) Adjournment motion b) Question hour
c) Supplementary question d) All of these

41. Which among the following is the final authority to interpret the Constitution?
a) President b) Supreme Court c) Council of Minister d) Parliament

42. A Governor holds office
a) For Five years b) For a period specified by the Parliament
c) During the pleasure of the President d) None of these

43. Chairman of Legislative Council is
a) Appointed by the Governor b) The Governor
c) Elected by the members of the Legislative Council
d) Appointed by the Speaker

44. Election Commission is a
a) Elected body b) Constitutional body
c) Statutory body d) None of these

45. A proclamation of National Emergency must be placed before the Parliament for its approval.
a) Within 1 month b) Within 2 month c) Within 6 month d) Within 1 year

46. President's Rule can be imposed for a maximum period of
a) 1 year b) 2 years c) 6 month d) 3 years

47. Which Constitutional Act made elementary education a Fundamental Right?
a) 86th CAA 2002 b) 87th CAA 2003 c) 91st CAA 2003 d) 100th CAA 2013

48. Who summons, prorogues and dissolves the State Legislative?
a) Chief Minister b) Speaker
c) Governor of the State d) President of India

49. Minimum and Maximum strength of the Legislative Assembly is
a) 60 and 500 b) 40 and 100 c) 70 and 700 d) 100 and 1000

50. _____ number of people represents graduate Constituency in the Vidhan Parishyadh
a) 1/10th b) 2/3rd c) 1/2th d) 1/5th

* * * * *

CBCS SCHEME

BIDTK158/BIDTK258/22BD16

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Des. Degree Examination, Dec.2023/Jan.2024

Innovation and Design Thinking

Time: 1 hrs.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. The stages of the design thinking process in order are
   a) Understand > Draw > Ideate > Crate > Test
   b) Empathize > Define > Ideate > Prototype > Test
   c) Empathize > Design > Implement > Produce > Test
   d) Understand > Define > Ideate > Produce > Try

2. The comprehensive principle of design thinking does not include
   a) Relationship b) Collaboration
   c) Communication d) Suppliers

3. Design Thinking typically help in _____.
   a) Innovation b) Data Analysis
   c) Marketing Management d) Operation Management

4. Mr. ABC wants to design a new bed that he can sell to nursing homes to use with their patients. However, Mr. ABC doesn't want anything to do with older adults or people with disabilities. According to the design thinking process, Mr. ABC will face problems because he is missing.
   a) Empathy b) Creativity c) Practicality d) Imagination

5. The three I's of design thinking do not include
   a) Interest b) Implementation c) Inspiration d) Ideation

6. In design, where does the information used to put together a problem statement come from?
   a) The design stage b) The ideate stage
   c) The define stage d) The testing stage

7. Collecting _____ is an important portion of testing a prototype in the test stage of design.
   a) Pictures b) Money c) Feedback d) E mails

8. A pototype is a simple experimental model of a proposed solution used to
   a) Test ideas b) Validate ideas
   c) Both d) None of these

9. Identify the correct statement
   a) To derive the power of design thinking, individuals, teams and organizations must have a leap of faith about the existence of a solution.
   b) Leap of faith is the page in the manual of design thinking containing the core philosophy about design thinking
   c) Design thinking presupposes that some people are inherently creative and become successful in creative product development. The team should have atleast one such person.
   d) None of these

10. Which is not basic modes of thinking?
    a) Analytical b) Judical c) Critical d) Synthetic

11. Design thinker in an organization are
    a) People b) Employees
    c) Managers d) All of these

12. What is the main objective of the empathize stage in design thinking?
    a) Understanding the problem b) Generating ideas
    c) Identifying the user needs d) Building prototypes

13. Mind mapping diagram provides information about
    a) Customer and product interaction
    b) Idea and its interaction among other ideas
    c) Visualization of problem statement
    d) None of these

14. Value chain analysis process provides
    a) Better understanding of customer expectations
    b) Uncover the information about partners capabilities
    c) Better market analysis
    d) All of these

15. Which one of the below helps in generating hypothesis about potential new business opportunities?
    a) Prototype b) Rapid concept development
    c) Ideate d) Learning launches

16. A visualization activity was performed by the employees of a bulb manufacturing company which included information in the form of
    a) Images of various types of bulbs produced by the company
    b) Its application suitability to the customers in the form of stories
    c) Clears or reduces the possibilities of unmatched mental models/pictures
    d) All of the above

17. The goal of the prototype phase is
a) To understand what component of your idea didn't work
b) To understand what component of your idea worked
c) Both of them
d) None of them

18. _____ is a tool to use the design details and terms to develop new business opportunities.
a) Visualization
b) Journey mapping
c) Rapid concept development
d) None of these

19. Which tool is used for feasibility check of assumptions of the new business ideas?
a) Value chain analysis
b) Rapid concept development
c) Prototype
d) Assumption testing

20. Identify the process that brings users and designers together to work towards a shared goal.
a) Problem statement formulation
b) Customer co-creation
c) Value chain analysis
d) None of these

21. Which process is a quick and inexpensive learning test to collect market driven data?
a) Learning launches
b) Prototyping
c) Customer co-creation
d) None of these

22. What is an example of a method for conducting user research?
a) Surveys
b) Usability testing
c) Design sprints
d) All of these

23. What is the process of collecting and analyzing data on how users interact with a design in real time called?
a) Real Time design interaction capture
b) Real Time design analysis
c) Real Time design interaction analysis
d) Real Time design interaction capture and analysis

24. What is the main goal of enabling efficient collaboration in digital space?
a) To create a digital environment where team members can easily share ideas, provide feedback and work together on projects in real time.
b) To develop a project management software for team members
c) To train team members on how to use design collaboration software
d) To implement video conferencing tools for remote team members

25. What is the purpose of user testing?
a) To gather feedback and identify areas for improvement in a product or service
b) To create a user-centered design
c) To create empathy map
d) To conduct user research

26. Which one of the following is not a part of various business process model steps?
a) Process maps
b) Process detection
c) Process imitation
d) Process termination

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27. An employer Mrs. ABC divides her business processes into basic components based on their functions and performance for the business is called:
    a) Building Product Management
    b) Business Product Management
    c) Business Process Modelling
    d) Basic Product Management

28. What is the main focus of design thinking in IT?
    a) Efficiency
    b) Cost effectiveness
    c) User-centeredness
    d) Innovation

29. Which stage in Design Thinking Process allows for the collaboration between designers, developers and stakeholders?
    a) Empathize
    b) Define
    c) Ideate
    d) Test

30. Which one of the following are advantages of Business Process Modeling?
    a) Align operations with business strategy
    b) Improves process communication
    c) Improves operational efficiencies
    d) All of these

31. How can Design Thinking in IT improve product services and processes?
    a) By identifying user needs and pain points
    b) By considering different perspectives
    c) By rapid prototyping and testing
    d) All of these

32. Which one of the following is part of Agile Virtual collaboration approach?
    a) Allow openness
    b) Establish a culture of continuous communication
    c) Develop a culture of courage and flexibility
    d) All of these

33. What is the main benefit of using a design?
    a) Efficiency
    b) Cost-effectiveness
    c) Improved user satisfaction
    d) Innovation

34. Business process modeling replaced the organization's previous effective packages
    a) Time and motion study
    b) Total quality management
    c) a and b
    d) None of these

35. Which method can be used to design complex software programs based on models, both structural and behavioural models?
    a) Scenario based prototype
    b) Agile discussion
    c) Simple prototype
    d) None of these

36. For a website development project in an industry, the software developers divide the main project into many smaller projects and adopt an iterative approach to incorporate any changes needed as per frequent customer feedback. This type of approach is found in
    a) Agile method
    b) Waterfall method
    c) Sprints
    d) All of these

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37. A time boxed iteration of continuous development cycle for a planned amount of work that has to be completed by the team and made ready for review is called
a) Prototyping
b) Sprint
c) Experience Design
d) Business Model Design

38. Which one is the process of setting goals, procedures and objectives in order to make a company or organization more competitive?
a) Visualization
b) Strategic management
c) Group discussion
d) Prototype

39. Which one of the following is not part of any type of innovation?
a) Disruptive
b) Radical
c) Conceptual
d) Architectural

40. Which innovation type is related to new concept, product or service which will create new value to the existing market and also create a completely new market?
a) Incremental
b) Sustaining
c) Disruptive
d) Radical

41. Duration of design thinking workshop can be
a) 2 hrs
b) 2 days
c) one week
d) Depends on the context of the workshop

42. Which one of the following are part of the scope of strategic innovation?
a) Managed innovation process
b) Strategic Alignment
c) Industries foresight and implementation
d) All of these

43. 'The willingness to try something by building, it is the evidence of experimentation'. The statement refers to
a) Story telling
b) Prototyping
c) Mind mapping
d) Conceptualizing

44. How does experience design relate to humanization in product development?
a) Experience design focuses on creating a positive user experience while, humanization focuses on making products more user friendly.
b) Experience design and humanization are unrelated.
c) Experience design and humanization focuses on creating a positive user experience
d) None of these

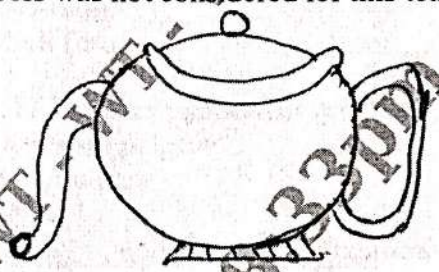
45. Which one is not part of planning stage of design thinking workshop?
a) Learning goals
b) Pre-meeting
c) Developing flow of activity
d) Idea testing

46. _____ innovation happens when a new technology completely disrupts existing business or economy and creates a new business model.
a) Incremental
b) Sustaining
c) Disruptive
d) Radical

47. Which of the following is not consideration while representing the story of the product?
a) The central idea of the product
b) Engaging the participants
c) Other products in market
d) Incorporate adequate detail

48. A company collects, analyses and rework by considering negative feedback to learn and improve to create a solution that is
a) Desirable to customer
b) Feasible to implement
c) Viable for long term success
d) All of these

49. What step of the design process was not considered for this tea pot?



a) Research and Design
b) Prototype and Testing
c) Design and Manufacturing
d) All of these

50. Mr. XYZ is starting a clothing company. Instead of making clothing that fits models, he wants to start thinking about what non models/common people/end users need and plan his design around them. Accordingly, he is engaging in
a) Design thinking
b) Model design
c) End user generation
d) Model thinking

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CBCS SCHEME

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BMATS101

First Semester B.E./B.Tech. Degree Examination, June/July 2024
Mathematics for CSE Stream – I

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With usual notation prove that $\tan\phi = r\frac{d\theta}{dr}$.	6	L2	CO1
	b.	Find the angle between the curves $r = \frac{a}{1+\cos\theta}$ and $r = \frac{b}{1-\cos\theta}$.	7	L2	CO1
	c.	Show that the radius of curvature at any point θ on the cycloid $x = a(\theta + \sin\theta)$, $y = a(1 - \cos\theta)$ is $4\cos\left(\frac{\theta}{2}\right)$.	7	L3	CO1
		OR			
Q.2	a.	Find the pedal equation of the curve $r(1 - \cos\theta) = 2a$.	7	L2	CO1
	b.	Find the radius of curvature for the curve $y^2 = \frac{a^2(a-x)}{x}$ at the point $(a, 0)$.	8	L3	CO1
	c.	Using modern mathematical tool write a program / code to plot the sine and cosine curve.	5	L3	CO5
		Module – 2			
Q.3	a.	Expand $\log(\sec x)$ upto the term containing x^4 using Maclausin's series.	6	L2	CO2
	b.	If $u = \log(\tan x + \tan y + \tan z)$, show that $\sin 2x\frac{\partial u}{\partial x} + \sin 2y\frac{\partial u}{\partial y} + \sin 2z\frac{\partial u}{\partial z} = 2$.	7	L2	CO2
	c.	Find the extreme values of the function $f(x, y) = x^2 + y^2 + 6x - 12$.	7	L3	CO2
		OR			
Q.4	a.	Evaluate i) $\lim_{x\to 0}\left(\frac{a^x + b^x}{2}\right)^{1/x}$ ii) $\lim_{x\to 0}\left(\frac{\tan x}{x}\right)^{1/x^2}$.	7	L2	CO2
	b.	If $u = f\left(\frac{x}{y}, \frac{y}{z}, \frac{z}{x}\right)$, show that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} + 2\frac{\partial u}{\partial z} = 0$.	8	L2	CO2
	c.	Using modern mathematical tool write a program/code to evaluate $\lim_{x\to\infty}(1+1/x)^x$.	5	L3	CO2

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		Module – 3			
Q.5	**a.**	Solve : $\frac{dy}{dx}+\frac{y}{x}=y^2x$.	**6**	**L2**	**CO3**
	b.	Find the orthogonal trajectories of $r = a(1+\cos\theta)$, where a is a parameter.	**7**	**L3**	**CO3**
	c.	Find the general solution of the equation $(px-y)(py+x) = 2p$ by reducing into Clairaut's form by taking the substitution $X = x^2$, $Y = y^2$.	**7**	**L2**	**CO3**
		OR			
Q.6	**a.**	Solve $(y \log y)\,dx + (x - \log y)dy = 0$.	**6**	**L2**	**CO3**
	b.	Prove that the system of parabolas $y^2 = 4a(x + a)$ is self-orthogonal.	**7**	**L3**	**CO3**
	c.	Solve : $xyp^2 - (x^2 + y^2)p + xy = 0$.	**7**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	i) Find the last digit of 7^{2013} ii) Find the last digit of 13^{37}	**6**	**L2**	**CO4**
	b.	i) Find the remainder when $175 \times 113 \times 53$ is divided by 11. ii) Find the remainder when 2^{23} is divided by 47.	**7**	**L2**	**CO4**
	c.	Encrypt the message STOP using RSA with key (2537, 13) using the prime numbers 43 and 59.	**7**	**L3**	**CO4**
		OR			
Q.8	**a.**	Solve $2x + 6y \equiv 1 \pmod 7$ $4x + 3y \equiv 2 \pmod 7$.	**6**	**L2**	**CO4**
	b.	Using Fermat's little theorem, show that $8^{30} - 1$ is divisible by 31.	**7**	**L2**	**CO4**
	c.	Show that $4(29)! + 5!$ Is divisible by 31.	**7**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	Find the Rank of the matrix $\begin{bmatrix} 2 & -1 & -3 & -1 \\ 1 & 2 & 3 & -1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}$	**6**	**L2**	**CO5**
	b.	Solve the system of Equations by Gauss-Jordon method $x + y + z = 9$ $2x + y - z = 0$ $2x + 5y + 7z = 52$.	**7**	**L3**	**CO5**
	c.	Using power method, find the largest eigen value and the corresponding eigen vector of the matrix $A = \begin{bmatrix} 2 & 0 & 1 \\ 0 & 2 & 0 \\ 1 & 0 & 2 \end{bmatrix}$. Carry out six iterations.	**7**	**L3**	**CO5**

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		OR			
Q.10	**a.**	Solve the following system of equations by Gauss-Siedel method. $27x + 6y - z = 85$, $6x + 15y + 2z = 72$, $x + y + 54z = 110$. Carry out three iterations.	**7**	**L3**	**CO5**
	b.	Investigate for what values of λ, μ the equations $x + y + z = 6$, $x + 2y + 3z = 10$, $x + 2y + \lambda z = \mu$ have i) No solution ii) Unique solution iii) Infinite number of solutions.	**8**	**L3**	**CO5**
	c.	Using modern mathematical tool, write a program/code to test the consistency of the equation $x + 2y - z = 1$ $2x + y + 4z = 2$ $3x + 3y + 4z = 1$	**5**	**L3**	**CO5**

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BMATS201

Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Mathematics – II for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. VTU Hand book is permitted.

		Module – 1	M	L	C
Q.1	a.	Evaluate $\int_0^a \int_0^x \int_0^{x+y} e^{(x+y+z)} dz dy dx$.	7	L2	CO1
	b.	By changing the order of integration evaluate $\int_0^{4a} \int_{x^2/4a}^{2\sqrt{ax}} xy dy dx$.	7	L3	CO1
	c.	With usual notation, prove that $\Gamma\left(\frac{1}{2}\right) = \sqrt{\pi}$.	6	L2	CO1
		OR			
Q.2	a.	Evaluate $\int_0^a \int_0^{\sqrt{a^2-y^2}} y^2\sqrt{x^2+y^2}\, dx dy$ by changing into polar coordinates.	7	L3	CO1
	b.	Find the area bounded between the parabolas $y^2 = 4ax$ and $x^2 = 4ay$ by double integration.	7	L2	CO1
	c.	Using Mathematical tool, write the code to find the volume bounded by the sphere $x^2 + y^2 + z^2 = a^2$ by double integration.	6	L3	CO5
		Module – 2			
Q.3	a.	Find the directional derivative of $\phi = xy^3 + yz^3$ at the point (2, -1, 1) in the direction of the vector $\hat{i} + 2\hat{j} + 2\hat{k}$.	7	L2	CO2
	b.	Verify whether the vector $\vec{F} = \frac{x\hat{i} + y\hat{j}}{x^2 + y^2}$ is both solenoidal and irrotational.	7	L2	CO2
	c.	Prove that the cylindrical coordinate system is orthogonal.	6	L2	CO2
		OR			
Q.4	a.	If $\vec{F} = \nabla(x^3 + y^3 + z^3 - 3xyz)$ find div $\vec{F}$ and curl $\vec{F}$.	7	L2	CO2
	b.	Find the angle between the normal's to the surface $x^2yz = 1$ at the points (-1, 1, 1) and (1, -1, -1).	7	L3	CO2
	c.	Using mathematical tool write the code to find divergence and curl of the vector $\vec{F} = (4xy - z^3)\hat{i} + 2x^2\hat{j} - 3xz^2\hat{k}$.	6	L3	CO5

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Module – 3

Q.5	a.	Let W be a subset of $V_3(R)$ consisting of vectors of the form (a, a^2, b) where the second component is the square of the first. Is W a subspace of $V_3(R)$.	7	L2	CO3
	b.	Let P_n be the vector space of real polynomial functions of degree $\leq n$. Verify that the transformation $T : P_2 \rightarrow P_1$ defined by $T(ax^2 + bx + c) = (a + b)x + c$ is linear.	7	L2	CO3
	c.	Find the Kernel and range of the linear transformation $T : R^3 \rightarrow R^2$ defined by $T(x, y, z) = (x + y, z)$.	6	L2	CO3
		OR			
Q.6	a.	Determine whether or not each of the following $x_1 = (2, 2, 1)$, $x_2 = (1, 3, 7)$, $x_3 = (1, 2, 3)$ forms a basis in R^3.	7	L2	CO3
	b.	Verify Rank-nullity theorem for the transformation $T : R^3 \rightarrow R^3$ defined by $T(x, y, z) = (x + 2y - z, y + z, x + y - 2z)$.	7	L2	CO3
	c.	The inner product of the polynomials $f(t) = t + 2$, $g(t) = 3t - 2$ in $p(t)$ is given by $\langle f, g \rangle = \int_0^1 f(t)g(t)\,dt$. Find i) $\langle f, g \rangle$ ii) $\|f\|$ iii) $\|g\|$	6	L2	CO3
		Module – 4			
Q.7	a.	Find an approximate root of the equation $\cos x = 3x - 1$ correct to four decimal places using Regula Falsi method between 0.5 and 0.7.	7	L2	CO4
	b.	The area 'A' of a circle of diameter 'd' is given by the following table: d: 80 85 90 95 100 A: 5026 5674 6362 7088 7854 Using appropriate Newton's interpolation formula for equispaced values of x, find area of the circle corresponding to the diameter 105.	7	L2	CO4
	c.	Evaluate $I = \int_0^5 \frac{1}{4x+5}\,dx$ by Simpson's $1/3^{rd}$ rule by considering 10 sub intervals. Hence find an approximate value of log5.	6	L3	CO4
		OR			
Q.8	a.	Find the real root of $x \log_{10} x = 1.2$ correct to four decimals that lies near 2.5 using Newton Raphson method.	7	L2	CO4
	b.	Fit a polynomial for the following data using Newton's divided difference formula: x: -4 -1 0 2 5 y: 1245 33 5 9 1335	7	L2	CO4
	c.	Use trapezoidal rule to find $\int_0^{0.6} e^{-x^2}\,dx$ by taking seven ordinates.	6	L3	CO4

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		Module – 5			
Q.9	a.	Employ Taylor's series method to obtain approximate solution at x = 0.1 and x = 0.2 for the initial value problem $\frac{dy}{dx} = 2y + 3e^x$, y(0) = 0.	7	L2	CO4
	b.	Apply Runge-Kutta method of fourth order to find an approximate solution at x = 0.1 given $\frac{dy}{dx} = 3x + y/2$, y(0) = 1.	7	L2	CO4
	c.	Apply Milne's predictor – corrector method to solve the equation $(y^2 + 1)dy - x^2dx = 0$ at x = 1 given y(0) = 1, y(0.25) = 1.0026, y(0.5) = 1.0206, y(0.75) = 1.0679.	6	L2	CO4
		OR			
Q.10	a.	Apply modified Euler's method to find solution at x = 0.1 by taking h = 0.1 given $y' = x^2 + y^2$, y(0) = 0.	7	L2	CO4
	b.	Find an approximate solution of $\frac{dy}{dx} = \frac{y^2 - x^2}{y^2 + x^2}$, y(0) = 1 at x = 0.2 using Runge-Kutta method of order four.	7	L2	CO4
	c.	Write the mathematical tool code to solve $\frac{dy}{dx} = x^2 + y$, y(0) = 10 using Taylor's series method at x = 0.1(0.1)0.3. Consider the terms upto fourth degree.	6	L3	CO5

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BCHES102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Applied Chemistry for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: *1. Answer any FIVE full questions, choosing ONE full question from each module.*
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What are electrochemical sensors? Explain the principle and working of electrochemical sensor.	07	L1	CO1
	b.	Explain the principle, working and any two applications of optical sensor.	06	L1	CO1
	c.	What is Quantum Dot sensitized solar cell? Explain the construction and working of Quantum Dot sensitized solar cell.	07	L1	CO1
		OR			
Q.2	a.	Explain the detection of bio-molecule ascorbic acid using disposable sensor and also write the electro oxidation reaction.	07	L1	CO1
	b.	Explain the working principle of electrochemical gas sensors for the detection of SO_x and NO_x .	06	L1	CO1
	c.	Explain the construction and working of Li-ion battery. Mention any two applications.	07	L1	CO1
		Module – 2			
Q.3	a.	What are memory devices? Explain the classification of electronic memory devices.	07	L2	CO2
	b.	Define optoelectronic device. Explain the working principle of optoelectronic device.	06	L2	CO2
	c.	What are liquid crystals? Explain the classification of liquid crystals.	07	L2	CO2
		OR			
Q.4	a.	Explain the types of organic memory devices by talking p-type and n-type semiconducting materials.	07	L2	CO2
	b.	Explain any three properties and applications of polythiophene (P3HT) suitable for optoelectronic devices.	06	L2	CO2
	c.	What is QLED? Mention any three properties and applications of QLED.	07	L2	CO2
		Module – 3			
Q.5	a.	Define metallic corrosion. Explain electrochemical theory of corrosion.	07	L3	CO3
	b.	A thick steel sheet of area 400 $inch^2$ is exposed to moist air. After 2 years of period, it was found to experience a weight lost of 375g due to corrosion if the density of steel is 7.9 g/cm^3, calculate CPR in mpy and mmpy.	06	L1	CO3
	c.	What are reference electrodes? Explain the construction, working and applications of calomel electrode.	07	L1	CO3
		OR			
Q.6	a.	What is galvanization? Explain galvanization of Iron. Mention its applications.	07	L1	CO3
	b.	What are concentration cells? Calculate the cell potential of the following cell at 298 K. $Ag \mid AgNO_3(0.005M) \parallel AgNO_3\ (0.5M) \mid Ag$	06	L1	CO3
	c.	Explain the principle and instruction of conductometry taking estimation of weak acid using a strong base as an example.	07	L2	CO3

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		Module – 4			
Q.7	**a.**	In a sample of a polymer 20% molecules have molecular mass 15,000g/mol, 35% molecules have molecular mass 20000g/mol. Calculate the number average and weight average molecular mass of the polymer.	**07**	**L3**	**CO4**
	b.	Explain the preparation of Kevlar. Mention any four applications.	**06**	**L2**	**CO4**
	c.	Explain the generation of hydrogen by Alkaline water electrolysis with a neat labelled diagram.	**07**	**L2**	**CO4**
		OR			
Q.8	**a.**	What are conducting polymers? Explain the conduction mechanism in polyacetylene through oxidative doping technique. Mention any two applications.	**07**	**L3**	**CO4**
	b.	What are PV cells? Explain the construction and working of photovoltaic cell.	**06**	**L2**	**CO4**
	c.	Explain the generation of hydrogen by proton exchange membrane electrolysis.	**07**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Define E-waste. Explain the sources and composition of E-waste.	**07**	**L2**	**CO5**
	b.	Explain the ill effects of materials used in manufacturing electrical and electronic products.	**06**	**L2**	**CO5**
	c.	Explain pyrometallurgical process of extraction of E-waste.	**07**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain the extraction of gold from E-waste.	**07**	**L2**	**CO5**
	b.	Explain direct recycling of E-waste.	**06**	**L2**	**CO5**
	c.	Write a brief note on role of stakeholders for example, producers consumers, recyclers and statutory bodies in management of E-waste.	**07**	**L2**	**CO5**

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BETCK105E/BETCKE105

First Semester B.E./B.Tech. Degree Examination, June/July 2024
Renewable Energy Sources

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	What are Renewable Energy Sources?	2	L2	CO1
	b.	What do you mean by sustainable development of Energy? What are its implications?	10	L2	CO1
	c.	Discuss the potential of Renewable Energy sources, with reference to India.	8	L2	CO1
		OR			
Q.2	a.	Write short notes on : i) Wave Energy ii) Oil Shale.	10	L2	CO1
	b.	What do you mean by Internet of Energy? Explain the Internet of Energy (IOE) relating the Renewable Energy Sources.	10	L2	CO1
		Module – 2			
Q.3	a.	What is Beam , Diffuse and Global radiation? Name the instruments used to measure these radiations.	4	L2	CO2
	b.	Explain the working of a Pyranometer with a neat sketch.	6	L2	CO2
	c.	Explain the construction and working of a flat plate collector.	10	L2	CO2
		OR			
Q.4	a.	What is a Solar Pond? Explain the working of a solar pond electric power plant with a neat diagram.	10	L2	CO2
	b.	What is a Solar Cell? Explain the principle of solar photovoltaic power generation.	10	L2	CO2
		Module – 3			
Q.5	a.	What are the different properties of wind?	5	L2	CO3
	b.	Explain with a neat sketch, the essential components of the wind energy convention system.	10	L2	CO3
	c.	What are the major problems associated with wind power?	5	L2	CO3
		OR			
Q.6	a.	Explain the process of Photosynthesis.	6	L2	CO3

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	b.	What is the difference between Biomass and Biogas?	4	L2	CO3
	c.	Explain the process of Biogas production using downdraft gasifier.	10	L2	CO3
		Module – 4			
Q.7	a.	What is Tidal Energy? Explain the mechanics of Tidal Energy.	10	L2	CO4
	b.	Explain the working of a single basin tidal power plant, with a neat sketch.	10	L2	CO4
		OR			
Q.8	a.	Describe the working of closed cycle OTEC, with necessary diagram.	10	L2	CO4
	b.	What are the problems associated with OTEC?	6	L2	CO4
	c.	Differentiate between Tidal and Wave energy.	4	L2	CO4
		Module – 5			
Q.9	a.	What is a Fuel cell?	2	L2	CO5
	b.	Give the classification of Fuel cell based on i) Tyre of Electrolyte used ii) Operating temperature iii) Physical state of fuel used.	8	L2	CO5
	c.	Explain the principle of working of a fuel cell with reference to $H_2 - O_2$ cell.	10	L2	CO5
		OR			
Q.10	a.	List various methods used for production of hydrogen used as an Energy carrier. Explain Electrolysis method for its production.	10	L2	CO5
	b.	List different methods used for Hydrogen storage and explain briefly any one method.	6	L2	CO5
	c.	Explain in brief the problems associated with hydrogen.	4	L2	CO5

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CBCS 2022 – SCHEME

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BCEDK103/203

First / Second Semester B.E. Degree Examination, June/July 2024

COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours **(COMMON TO ALL BRANCHES)** **Max.Marks:100**

Note: 1. Answer all four full question

2. Grid sheets may be provided for making preparatory sketches

Q. No.		Marks
	Module - 1	
1	A $30^0 - 60^0$ set square of 60 mm longest side is so kept such that the longest side is in HP, making an angle of 30^0 with VP. The set square itself is inclined at 45^0 to HP. Draw the projections of the setsquare.	20
	Module - 2	
2	A square pyramid 35 mm sides of base and 60 mm axis length rests on HP on one of its slant edges. Draw the projections of the pyramid when the axis is inclined to VP at 45^0.	30
	Module – 3	
3	A hemisphere of 40 mm diameter is supported co-axially on the vertex of a cone of base diameter 60 mm and axis length 50 mm. The flat circular face of hemisphere is facing upside. Draw the isometric projection of the combination of solids.	25
	Module – 4	
4	A square prism of base sides 30 mm and axis length 60 mm is resting on HP with all the vertical faces equally inclined to VP. It is cut by an inclined plane 60^0 to HP and perpendicular to VP and is passing through a point on the axis at a distance of 50 mm from the base. Obtain the development for the truncated portion of the solid.	25

Examiner 1:
Name:
Signature:

Examiner 2:
Name:
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CBCS 2022 – SCHEME

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BCEDK103/203

First / Second Semester B.E. Degree Examination, June/July 2024

COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours **(COMMON TO ALL BRANCHES)** **Max.Marks:100**

Note: 1. Answer all four full question

2. Grid sheets may be provided for making preparatory sketches

Q. No.		Marks
	Module – 1	
1	A circular lamina of 50 mm diameter rests on HP such that one of its diameters is inclined at 30^0 to VP and 45° to HP. Draw its top and front views in this position.	20
	Module – 2	
2	A hexagonal prism 25 mm sides of base and 50 mm axis length rests on HP on one of its base edges. Draw the projections of the prism when the axis is inclined to HP at 45^0 and appears to be inclined to VP 40^0.	30
	Module – 3	
3	The frustum of a square pyramid of base sides 40 mm and top face side 20 mm and height 60 mm rest on the center of the top of a square block of side 60 mm and height 20 mm. The base edges of the pyramid are parallel to the top edges of the square block. Draw the isometric projection of the combination of the solids.	25
	Module - 4	
4	A square prism of base side 40 mm and axis length 65 mm is resting on HP on its base with all the vertical faces being equally inclined to VP. It is cut by an inclined plane 60^0 to HP and perpendicular to VP and is passing through the point on the axis at a distance 15 mm from the top face. Draw the development of the lower portion of the prism.	25

Examiner 1:
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Examiner 2:
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BCEDK103/203

First / Second Semester B.E. Degree Examination, June/July 2024

COMPUTER AIDED ENGINEERING DRAWING

Time: 3 Hours **(COMMON TO ALL BRANCHES)** **Max.Marks:100**

Note: 1. Answer all four full questions

2. Grid sheets may be provided for making preparatory sketches

Q. No.		Marks
	Module - 1	
1	A square lamina of 40 mm side rests on one of its sides on HP. The lamina makes 30° to HP and the side on which it rests makes 45° to VP. Draw its projections.	20
	Module - 2	
2	A tetrahedron of 55 mm sides rests on one of its corners such that an edge containing that corner is inclined to HP at 50^0 and VP at 30^0. Draw its projections.	30
	Module - 3	
3	A sphere of diameter 50 mm rests centrally on top of a cube of sides 50 mm. Draw the isometric projections of the combination of solids.	25
	Module - 4	
4	A square prism of base side 40 mm and axis length 65 mm is resting on HP on its base with all the vertical faces being equally inclined to VP. It is cut by an inclined plane 60^0 to HP and perpendicular to VP and is passing through the point on the axis at a distance 15 mm from the top face. Draw the development of the lower portion of the prism.	25

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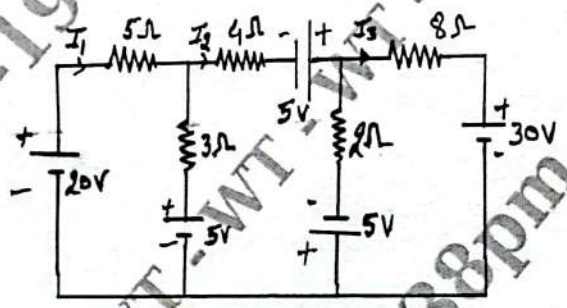
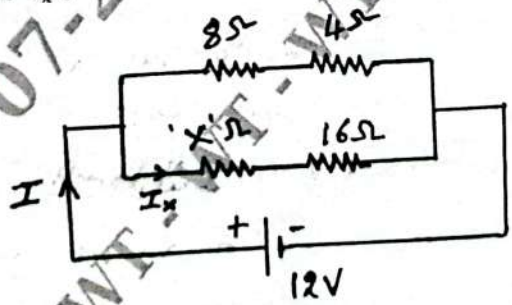
BESCK104B/ BESCKB104

First Semester B.E./B.Tech. Degree Examination, June/July 2024
Introduction to Electrical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. *Answer any FIVE full questions, choosing ONE full question from each module.*
2. *M : Marks , L: Bloom's level , C: Course outcomes.*
3. *VTU databook is permitted.*

		Module – 1	M	L	C
Q.1	a.	Write the general structure of electrical power system using single line diagram approach and explain briefly.	6	L2	CO1
	b.	State ohm's law and mention its limitations.	6	L2	CO1
	c.	Find the currents I_1, I_2, I_3 for the circuit Fig Q1(c), shown below using Kirchoff's laws.  Fig Q1(c)	8	L3	CO1
		OR			
Q.2	a.	With a neat block diagram approach, explain Hydro-electric power plant.	6	L2	CO1
	b.	State Kirchoff's current and voltage law and write their the general mathematical expression.	6	L2	CO1
	c.	If the total power dissipated in the circuit Fig Q2(c), show below is 18W. Calculate the value of unknown resistance 'X' in ohms and the current flowing through it 'I_x'.  Fig Q2(c)	8	L2	CO2

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		Module – 2			
Q.3	**a.**	Define the following parameters with respect to ac sinusoidal waveform. i) RMS value ii) Average value iii) Form factor iv) Peak factor.	**4**	**L2**	**CO1**
	b.	Explain the concept of generation of 3ϕ A.C voltages with neat waveforms.	**6**	**L2**	**CO2**
	c.	Write a neat diagram of pure inductive circuit supplies by A.C sinusoidal voltage and derive the relation between instantaneous voltage and current. Draw the relevant vector diagram.	**6**	**L3**	**CO2**
	d.	A balanced Y – connected load is supplied from a balanced 3ϕ, 400V, 50Hz system. The current in each phase is 30A and lags 30° behind the phase voltage. Find the phase voltage and total power.	**4**	**L3**	**CO2**
		OR			
Q.4	**a.**	Define the following parameters with respect to a.c sinusoidal waveform : i) Amplitude ii) Frequency iii) Peak to Peak value iv) Instantaneous value.	**4**	**L2**	**CO1**
	b.	Write a neat circuit of resistance in series with capacitance supplied by A.C. sinusoidal voltage. Derive the expression for power consumed and write and relevant power wave forms.	**6**	**L3**	**CO2**
	c.	A series circuit with R = 10Ω, L = 50mH, C = 100μF is supplied with 200V, 50Hz, a.c supply. Calculate the i) impedance ii) Supply current iii) Power iv) Power factor of the circuit.	**6**	**L3**	**CO2**
	d.	Define power factor of an a.c circuit. Mention its significance in electrical systems.	**4**	**L2**	**CO2**
		Module – 3			
Q.5	**a.**	With neat relevant diagram, explain the principle of operation of D.C motor. Briefly mention the significance of back.	**8**	**L2**	**CO3**
	b.	Derive an expression for induced emf of a D.C generator.	**6**	**L2**	**CO3**
	c.	A 4 pole D.C shunt motor takes 25A from 250Vsupply. The armature and field resistance are 0.5Ω and 125Ω respectively. The wave wound armature has 30 slots with 10conductors in each slot. If the flux per pole is 0.02wb. Calculate speed, torque developed and power developed in armature.	**6**	**L3**	**CO3**
		OR			
Q.6	**a.**	With a neat sketch, explain the construction and main parts of D.C generator. Mention the function of each part and material used to manufacture them.	**8**	**L2**	**CO3**
	b.	Derive an expression for torque developed by a D.C motor.	**6**	**L3**	**CO3**
	c.	A 30kW, 300V, D.C shunt generator has armature and field resistance of 0.05Ω and 100Ω respectively. Calculate power developed by the armature when it delivers full output power.	**6**	**L3**	**CO3**

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		Module – 4			
Q.7	**a.**	List the various losses in a transformer. Explain how they vary with the load. Give their equations and mention how they are minimized.	**8**	**L2**	**CO3**
	b.	Explain the construction of slip ring and squirrel cage type induction motor.	**6**	**L2**	**CO4**
	c.	An 8-pole alternator runs at 750rpm and it supplies power to 4 pole induction motor. The frequency of rotor is 1.5Hz. Calculate the speed of the motor and also slip of motor.	**6**	**L3**	**CO4**
		OR			
Q.8	**a.**	A 600KVA transformer has an efficiency of 92% at full load, upf and at half load, 0.9p.f. Determine its efficiency at 75% of full load, 0.9p.f.	**8**	**L3**	**CO4**
	b.	A 250KVA, 11000/415V, 50Hz 1-ϕ transformer has 80 turns on secondary. Calculate : i) The rated primary and secondary currents ii) The number of primary turns iii) The maximum value of flux iv) Voltage induced per turn.	**6**	**L3**	**CO4**
	c.	Define slip of an induction motor. Derive an expression for effect of slip on the rotor frequency.	**6**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	With neat sketch, explain the working principle of a fuse. Mention its merits and demerits.	**8**	**L2**	**CO5**
	b.	What is electric shock? Mention few safety precautions to avoid electric shocks.	**6**	**L2**	**CO5**
	c.	What is electricity tariff? Explain two part electricity tariff.	**6**	**L2**	**CO5**
		OR			
Q.10	**a.**	With a neat circuit and switching table. Explain 3-ways control of load. Mention where it is applicable.	**8**	**L3**	**CO5**
	b.	What is earthing? With a neat diagram explain pipe earthing.	**6**	**L2**	**CO5**
	c.	Mention the power rating of the following electrical appliances. i) Air conditioners ii) Laptops iii) LED tubelights iv) Washing machines Calculate the total power consumed by these four appliances.	**6**	**L4**	**CO5**

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BESCK204C/BESCKC204

Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Introduction to Electronics and Communication

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Draw the block diagram of Regulated power supply and mention the function of each block.	8	L2	CO1
	b.	With the use of circuit diagram and waveforms, explain the working of Half wave rectifier with capacitor filter.	8	L2	CO1
	c.	Mention advantages of –ve feedback.	4	L1	CO1
		OR			
Q.2	a.	List out and explain the various types of amplifiers.	8	L1	CO1
	b.	With neat diagram, explain the concept of negative feedback amplifier.	7	L2	CO1
	c.	Write a note on Multistage amplifiers.	5	L1	CO1
		Module – 2			
Q.3	a.	Explain the working of RC – ladder network oscillator.	6	L2	CO2
	b.	Define Multivibrators. Explain the working of single stage, astable multivibrator with diagram.	8	L1	CO2
	c.	Explain its working of Weinbridge Oscillator with diagram.	6	L2	CO2
		OR			
Q.4	a.	Define the following terms with respect to the Op_Amp : i) CMRR ii) Slew rate iii) Supply voltage rejection ratio iv) Input offset voltage v) Input offset current.	10	L1	CO2
	b.	Explain how Op_Amp can be used as i) Voltage follower ii) Integrator.	10	L2	CO2
		Module – 3			
Q.5	a.	Convert i) $(3568)_{10} = (?)_2$ ii) $(3FD)_{16} = (?)_2$ iii) $(110111)_2 = (?)_{10}$ iv) $(1234)_{10} = (?)_8$ v) $(5678)_{10} = (?)_{16}$.	10	L2	CO3
	b.	Write any four Boolean theorems and Identities.	10	L1	CO3
		OR			
Q.6	a.	Simplify the following Boolean functions : i) $Y = A\overline{B} + AB$ ii) $F = B[(A + \overline{B})(B + C)]$ iii) $Z = B(A + C) + C$.	8	L3	CO3

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	b.	Explain Half adder circuit with truth table, Realize the circuit for sum and carry using basic gates.	8	L2	CO3
	c.	Write the Symbol and Truth Table of AND and OR – Gate.	4	L1	CO3
		Module – 4			
Q.7	a.	Define Embedded system and explain the classification of Embedded system based on Complexity and Deterministic behavior.	10	L2	CO4
	b.	Compare Embedded system and General computing system.	6	L1	CO4
	c.	List out the major applications areas of Embedded system.	4	L1	CO4
		OR			
Q.8	a.	With the use of diagram, explain the core of an Embedded system.	8	L2	CO4
	b.	Compare RISC and CISC.	6	L1	CO4
	c.	Write a short notes on Sensors and 7 – segment LED displays.	6	L2	CO4
		Module – 5			
Q.9	a.	With the help of block diagram, explain the basic Communication system.	10	L2	CO5
	b.	Define Noise and explain the various kinds of noises.	10	L2	CO5
		OR			
Q.10	a.	Define Multiplexing and explain types of Communication systems.	8	L2	CO5
	b.	Classify and explain the Multiple Access Techniques.	8	L2	CO5
	c.	Mention the Need for Modulation.	4	L1	CO5

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BETCK205H/BETCKH205

Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Introduction to Internet of Things (IOT)

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Classify the network types based on physical topologies and connection types with schematic diagram.	10	L2	CO1
	b.	With a neat diagram, explain the interdependency technology for IOT planes.	10	L2	CO1
		OR			
Q.2	a.	With neat diagram, explain the network communication between two hosts following OSI model.	10	L2	CO1
	b.	Explain the interdependencies and reach of IoT over various application domains and networking paradigms.	10	L2	CO1
		Module – 2			
Q.3	a.	Outline the basic differences between transducers, sensors and actuators.	6	L2	CO2
	b.	Explain the major factors influence the choice of sensors in IoT based sensing applications.	8	L2	CO2
	c.	Define Sensor and explain the characteristics of sensor.	6	L1	CO1
		OR			
Q.4	a.	Classify the sensor based on : i) Power requirements ii) Sensor output iii) Power to be measured.	10	L2	CO2
	b.	Classify Sensing types on the nature of the environment and the physical sensors.	10	L2	CO2
		Module – 3			
Q.5	a.	Explain IoT device design and selection considerations.	10	L2	CO2
	b.	What are the parameters considered for off loading the data and identify typical data offload locations available in context of IoT.	10	L2	CO2
		OR			
Q.6	a.	Explain event detection using onsite , offsite remote processing topology and collaborative processing technology.	10	L2	CO2
	b.	Classify the data based on how they can be accessed and stored and the importance of processing of IoT.	10	L2	CO2

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		Module – 4			
Q.7	**a.**	Explain the classification of virtualization based on the requirements of the user.	**6**	**L2**	**CO2**
	b.	Explain different types of cloud model.	**10**	**L2**	**CO1**
	c.	What is SLA and mention its metrics.	**4**	**L2**	**CO2**
		OR			
Q.8	**a.**	What are the advantages of virtualization?	**10**	**L2**	**CO1**
	b.	Explain different types of cloud simulators with its features.	**10**	**L2**	**CO1**
		Module – 5			
Q.9	**a.**	Explain the different components of health care IoT.	**10**	**L2**	**CO1**
	b.	Explain the architecture and advantages of vehicular IoT.	**10**	**L2**	**CO2**
		OR			
Q.10	**a.**	What is Machine Learning? What are the advantages and challenges of Machine Learning?	**10**	**L2**	**CO2**
	b.	What are the advantages and risk of health care IoT?	**10**	**L2**	**CO2**

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CBCS SCHEME

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 20

Professional Writing Skills in English

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Choose the part of the sentence that has an error :

1. If I had known (a) this yesterday (b) I will have helped him (c) no error (d)
2. Having received your letter (a) this morning, we was writing (b) to thank you for the same (c) no error (d)
3. A large number of peoples (a) have gathered (b) to greek the leader (c) no error (d)
4. Driving for five hundred kilometers in a day (a) are a tiring proposition (b) no error (c)

Directions : Fill in the blanks with suitable phrasal verbs :

5. His arrogance _____ his ruin.
   a) brought in b) brought up
   c) brought about d) none of these
6. Henry _____ the magazine quickly.
   a) Looked through b) Looked up
   c) Looked in d) None of these

Directions : Choose a suitable verb to complete the sentence :

7. One of our employees _____ retiring today.
   a) are b) is
   c) were d) none of these

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8. Either the teacher or the student _____ to be blamed for his performance in the final exam.
   a) are
   b) is
   c) were
   d) none of these

Directions : Fill in the blanks with suitable tenses :

9. Suddenly she gave a loud scream and _____ to the ground.
   a) had fallen
   b) has fallen
   c) fell
   d) none of these

10. The room _____ but the police failed to find anything suspicious.
   a) Searched
   b) was searched
   c) had searched
   d) none of these

Directions : Do as directed :

11. Okay, see you _____ the concert.
   a) at
   b) in
   c) for
   d) none of these

12. The children were _____ at having been informed about the trip.
   a) thrilling
   b) thrills
   c) thrilled
   d) none of these

13. _____ you ever been to Kashmir?
   a) Have
   b) Did
   c) Had
   d) None of these

14. Don't narrate _____ stories, they scare me.
   a) ghastly
   b) ghostly
   c) both 'a' and 'b'
   d) none of these

15. That _____ be true. He wouldn't do something like that.
   a) wouldn't
   b) shouldn't
   c) can't
   d) none of these

Directions : Rearrange the sentence :

16. defined as a place (a) where man is passive (b) and the rest of the nature is active (c) a sanctuary may be (d)
   a) a, b, c, d
   b) d, c, a, b
   c) b, c, d, a
   d) d, a, b, c

17. are simply at a loss (a) of 500 and 1000 rupee notes (b) all the corrupt politicians and their cronics (c) after the demonetization (d)
   a) c, a, d, b
   b) b, a, c, d
   c) d, c, b, a
   d) b, c, a, d

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Directions : Change the voice of the following sentences :

18. You need to clean your shoes properly.
    a) Your shoes are needed to clean properly.
    b) You are needed to clean your shoes properly
    c) Your shoes need to be cleaned properly
    d) Your shoes are needed by you to clean properly

19. James watt discovered the energy of steam.
    a) The energy of steam discovered James watt
    b) The energy of steam was discovered by James watt.
    c) James watt discovering the energy of steam
    d) James watt had been discovered energy by the steam

Directions : Convert the following sentences from Direct to Indirect speech :

20. "I am sorry", he said.
    a) He apologized that he was sorry
    b) He cried that he was to be sorry
    c) He demanded that he was sorry
    d) All of these

Directions : Do as directed :

21. A sentence that introduces the topic or the main idea to the readers is called.
    a) Topic sentence
    b) First sentence
    c) Both 'a' and 'b'
    d) None of these

22. A paragraph which is written after analyzing a situation is called,
    a) Descriptive paragraph
    b) Analytical paragraph
    c) Illustrative paragraph
    d) narrative paragraph

23. The important parts of an essay are :
    a) Introduction
    b) Body
    c) Conclusion
    d) All of these

24. _____ is a gist of any passage written in as few words as possible.
    a) Essay writing
    b) Precis writing
    c) Analytical writing
    d) None of these

25. Which among the following is not a feature of reports?
    a) Focuses on facts and data
    b) Is written for a specific purpose
    c) Includes irrelevant information
    d) Is structured in an organized way

26. Reports which are submitted at regular intervals is called,
    a) Routine report
    b) Periodic report
    c) Both 'a' and 'b'
    d) None of these

27. A technical report establishes a,
    a) illogical conclusion
    b) logical conclusion
    c) personal prejudice
    d) misplaced learning

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28. _____ is drafted in response to an advertisement or demand.
a) Solicited proposal
b) Unsolicited proposal
c) Both 'a' and 'b'
d) None of these

29. Childhood is a time when there are _____ responsibilities to make life difficult. If a child _____good parents, he is fed, looked _____ and loved.
a) many, had, up
b) few, has, after
c) little, have, at
d) all of these

30. Listening is a vital skill which helps in enhancing our learning.
a) True
b) False

31. Which among the following are barriers to listening?
a) Forged attention
b) Poor interpersonal relations
c) Premature evaluation
d) All of these

32. Which among the following should not be implemented for effective listening?
a) Having an open mind
b) Not being prejudiced
c) Employing critical thinking
d) Asking irrelevant questions

33. A business letter must be,
a) written in proper format
b) short and concise
c) polite in tone
d) All of these

34. The date on a business letter should appear after the salutation.
a) True
b) False

35. This format of the letter has the heading, dateline, complementary closure and signature right aligned.
a) Block format
b) Informal format
c) Modified block format
d) None of these

36. Which among the following is not to be mentioned in a resume?
a) Educational qualification
b) Work experience
c) Strengths
d) Weaknesses

37. The _____ format of resume lists your work history with dates, with your most recent employer and job title listed first.
a) Historical
b) Functional
c) Chronological
d) All of these

38. BCC in an email refers to :
a) British council careers
b) Blind carbon copy
c) Booked carbon copy
d) None of these

39. The cover letter is written,
a) To introduce oneself as the suitable candidate for the job.
b) To give biographical details of the candidate.
c) To try for the job
d) To let the employer know of our writing skills

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40. _____ communication is a direct, written or oral communication that occurs between two or more persons
a) Interpersonal b) Extra-personal c) Intrapersonal d) None of these

41. In a group discussion one must communicate with,
a) Hostility b) Arrogance
c) Long sentences d) Knowledge

42. Which among the following should not be followed while appearing for an interview?
a) Arriving late to the venue b) Knowing your resume
c) Being formally dressed d) Knowledge of the company

43. When giving a presentation in front of an audience you should do all of the following except :
a) Speak loud and clear b) Provide handouts if needed
c) Dress professionally d) Lack of eye contact with the audience

44. A group discussion checks and monitors,
a) Leadership skills b) Listening ability
c) Confidence d) All of these

45. Communication helps to make accurate decisions and influence organizational performance positively.
a) True b) False

Directions : Fill in the Blanks :

46. What actually scared us _____ the fact that there was no one around to help us.
a) were b) was
c) with d) all of these

47. He was the man _____ they thought was dead.
a) of b) who c) whom d) all of these

48. The flowers smell _____
a) Sweet b) Sweetly c) Sweeter d) Sweetest

49. The Guptas are travelling _____ plane.
a) at b) in c) on d) by

50. Which of the following sentence does not contain misplaced modifier?
a) Tired after a long day at work, Rita napped with her cat.
b) Happy that school was over, the afternoon was quite relaxing
c) We glued together the vase we broke quietly
d) My uncle had to see a doctor with indigestion

* * * * *

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CBCS SCHEME

BKBKK107/207

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Question Paper Version : C

First/Second Semester B.E. /B.Tech. Degree Examination, June/July 2024

Balake Kannada

(COMMON TO ALL BRANCHES)

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Translate the following Kannada words into English.

1 MagaLu
a) Son b) Mother c) Daughter d) Sister

2 Kappu BaNNa
a) Black color b) Red color c) White color d) Green color

3 Obba Vidyarthi
a) One Teacher b) One Servant c) One Brother d) One Student.

Translate the following English words into Kannada.

4 Book _____
a) Buk b) Pustaka c) Byag d) Pencil

5 Her House
a) IvaLa Mane b) AvaLa Mane c) Avana Mane d) Adara Mane

6 Big Tree
a) Chikka Mara b) doDDa Mara c) AgaLa Mara d) SaNNa Mara

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Match the following using the table given below :

a)	Green	i)	Huduga
b)	Fruit	ii)	Sihi
c)	Boy	iii)	HaNNu
d)	Son	iv)	Hasiru
e)	Sweet	v)	Maga

7 Green _____
a) = i b) = ii c) = iii d) = iv

8 Fruit _____
a) = i b) = ii c) = iii d) = v

9 Boy _____
a) = i b) = ii c) = iii d) = iv

10 Son _____
a) = i b) = ii c) = iv d) = v

11 Sweet _____
a) = i b) = ii c) = iii d) = v

Write appropriate words for the following :

12 Where _____
a) ELLi b) Yaake c) Yaaru d) Estu

13 Teacher _____
a) GeLathi b) Shikshaka c) Vidyarti d) Huduga

14 Girl _____
a) Huduga b) Mitra c) Hudugi d) Snehita

15 Bitter _____
a) Sihi b) Uppu c) Kahi d) Khara

16 Library _____
a) Shale b) Vidyakaya c) AngaDi d) Granthalaya

Transform the following Kannada words as per the given model (example) :

Example : angaDi – angaDiyalli

17 Kacheri _____
a) Maneyalli b) Kacheriyalli c) Shaleyalli d) Halliyalli

18 Batte _____
a) Batteyalli b) Angiyalli c) BaNNadalli d) Batteyinda

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19 How would you write "his Mother" in Kannada?
a) Avana Tande b) Avana Tamma c) Avana Taayi d) Avana Tangi

20 How would you write "This is My College" in Kannada?
a) Adu Nmma Vidyalya b) Idu Nanna Vidyalaya
c) Adu Avara Vidyalaya d) Idu Ivana Vidyalaya

21 How would you write "Who is She?" in Kannada?
a) AvaLu Yaaru? b) Avanu Yaaru? c) Idu Yaaru d) Ivaru Yaaru?

22 What is the meaning of "Don't – go"?
a) Bara Beda b) Hoga Beda c) Tinna Beda d) Kudiya Beda

23 What is the meaning of "My Book" in Kannada?
a) Nanna Mitra b) Nanna Pustaka c) Nanna Angi d) Nama Mane

24 What is the meaning of "Flower" in Kannada?
a) HaNNu b) Hoovu c) Ele d) Mane

25 Which one of the following means the color "Red" in Kannada?
a) Kempu b) BiLi c) NeeLi d) HaLadi

Write the English Word for the following :

26 Mane _____
a) Hotel b) House c) Shop d) Street

27 Mara _____
a) Tree b) Leaf c) Flower d) Fruit

28 Maga _____
a) Father b) Mother c) Uncle d) Son

29 Amma _____
a) Younger Brother b) Elder Brother c) Mother d) Elder Sister

30 HaNNu _____
a) Fruit b) Flower c) Seed d) Plant

Match the following using the Table given below?

a)	Student	i)	Vidyalaya
b)	Younger brother	ii)	Vidyarthi
c)	Teacher	iii)	Vaidya
d)	Doctor	iv)	Tamma
e)	College	v)	Shikshaka

31 Student _____
a) = i b) = ii c) = iii d) = iv

32 Younger Brother _____
a) = i b) = ii c) = iii d) = iv

33 Teacher _____
a) = i b) = ii c) = iv d) = v

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34 Doctor _____
a) = i b) = ii c) = iii d) = iv

35 College _____
a) = i b) = ii c) = iii d) = iv

Translate the following English sentence into Kannada sentence.

36 Who are you?
a) Naanu Yaaru b) avaLu Yaaru c) niinu Yaaru d) adu Yaaru

37 What is your name?
a) Ninna Hesaru Enu? b) Nanna Hesaru Enu
c) Idara Hesaru Enu? d) AvaLa Hesaru Enu

38 Where is your House?
a) Avana Mane Elli Ide? b) Ninna Mane Elli Ide?
c) AvaLa Mane Elli Ide? d) Adara Mane Elli Ide?

39 Who is he?
a) Adu Yaaru? b) Avanu Yaaru? c) Idu Yaaru? d) Idu Elli?

40 Where is your younger sister?
a) Ninna Tamma Elli Iddale? b) Ninna Akka Elli Iddale?
c) Ninna Tangi Elli Iddale? d) Ninna Anna Elli Iddale?

Fill in the blank for the given English words into Kannada meaning.

41 Long _____
a) Chikka b) Dappa c) agala d) Udda

42 New _____
a) gaTTi b) Hosa c) HaLeya d) Taaja

43 Hard _____
a) SaNNA b) gaTTi c) hagura d) dubaari

44 Salty _____
a) Uppu b) huLi c) Khaara d) Sihi

45 Dirty _____
a) Subhra b) BiLi c) ONa d) galiiju

Write the Kannada vocabulary for the following English words.

46 Who _____
a) Enu b) Eke c) Yaaru d) Elli

47 This _____
a) Idu b) Adu c) Avu d) Ivu

48 She _____
a) avanu b) avaLu c) avaru d) Ivaru

49 His _____
a) avariage b) avaLu c) avana d) Nanage

50 When _____
a) Yaaru b) Hege c) Estu d) Yavaga

* * * * *

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BKSKK107/207
Question Paper Version : D

First/Second Semester B.E/B.Tech. Degree Examination, June/July 2024

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

(COMMON TO ALL BRANCHES)

Time: 1 hrs.] [Max. Marks: 50

ಸೂಚನೆಗಳು

1. ಎಲ್ಲ ೫೦ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿ ಪ್ರಶ್ನೆಗೆ ಒಂದು ಅಂಕ.
2. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಯು.ಎಸ್.ಎನ್ ಸಂಖ್ಯೆ ಹಾಗೂ ಪಶ್ನೆ ಪತ್ರಿಕೆಯ ಶ್ರೇಣಿಯನ್ನು ಅಂದರೆ A, B, C ಅಥವಾ D ಯನ್ನು ತಪ್ಪಿಲ್ಲದಂತೆ ಕಡ್ಡಾಯವಾಗಿ ಗುರುತಿಸುವುದು ಅಭ್ಯರ್ಥಿಯ ಜವಾಬ್ದಾರಿಯಾಗಿರುತ್ತದೆ.
3. ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ನಿಗದಿಪಡಿಸಿರುವ ಸ್ಥಳದಲ್ಲಿ ಭರ್ತಿಮಾಡದೆ ಹಾಗೆಯೇ ಬಿಟ್ಟಲ್ಲಿ ಅಥವಾ ಭರ್ತಿಮಾಡಿದ ಮಾಹಿತಿಯಲ್ಲಿ ಯಾವುದೇ ವ್ಯತ್ಯಾಸವಿದ್ದಲ್ಲಿ ಅಂತಹ ಉತ್ತರ ಪತ್ರಿಕೆಗಳನ್ನು ರದ್ದು ಪಡಿಸಲಾಗುವುದು.
4. ಕೇವಲ ಒಂದು ಉತ್ತರವನ್ನು ಮಾತ್ರ ಉತ್ತರ ಪತ್ರಿಕೆಯಲ್ಲಿ ಗುರುತಿಸತಕ್ಕದ್ದು. ಒಂದೆ ಪ್ರಶ್ನೆಗೆ ಎರಡು ಉತ್ತರವನ್ನು ಗುರುತಿಸುವುದು ಅಮಾನ್ಯ.
5. ಎಲ್ಲಾ ಉತ್ತರಗಳನ್ನು ನಿಮಗೆ ಒದಗಿಸಲಾದ ಓ.ಎಂ.ಆರ್ ಉತ್ತರ ಪತ್ರಿಕೆಯ ಹಾಳೆಯ ಮೇಲೆ ಕಪ್ಪು ಅಥವಾ ನೀಲಿ ಶಾಹಿಯ ಬಾಲ್‌ಪಾಯಿಂಟ್ ಪೆನ್ನಿನಿಂದ ಗುರುತು ಮಾಡಬೇಕು.

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1. ಎಲ್ಲರೊಳಗೆ ನಾವು ಏನಾಗಬೇರಂದು ಡ.ವಿ.ಜಿ ತಿಳಿಸಿದ್ದಾರೆ?
   a) ಬೇರೆಯಾಗಬೇಕು
   b) ಒಂದಾಗಬೇಕು
   c) ದೂರವಾಗಬೇಕು
   d) ಮಾತಾಡಬೇಕು.

2. ಕಬ್ಬಿಗರ ಕಾವ್ಯ ಇದರ ಕರ್ತೃ ಯಾರು?
   a) ಪಂಪ
   b) ಆಂಡಯ್ಯ
   c) ಬಸವಣ್ಣ
   d) ಹಂಪನಾ.

3. ಹುಲಿಗಂಜಿ ಹುತ್ತವ ಹೊಕ್ಕಡೆ ------ ತಿಂಬುದ ಮಾಬುದೆ?
   a) ಸರ್ಪ
   b) ಆನೆ
   c) ಸಿಂಹ
   d) ಚಿರತೆ.

4. ಪುರಂದರ ದಾಸರ ವಚನಗಳ ಅಂಕಿತನಾಮ ಯಾವುದು?
   a) ರಾಮನಾಥ
   b) ವಿಠಲ
   c) ಗುಹೇಶ್ವರ
   d) ಪುರಂದರ ವಿಠಲ.

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5. ತಲ್ಲಣಿಸಿದಿರು ಕಂಡ್ಯ ತಾಳು ಮನವೇ ಕೀರ್ತನೆ ಕೀರ್ತನಕಾರರು ಯಾರು?

a) ಪುರಂದರದಾಸರು b) ಕನಕದಾಸರು

c) ಶಿವಯೋಗಿ d) ಶಿಶುನಾಳ ಶರೀಫರು.

6. ಕುಂಬಾರಕಿ ಆರು ಕಾಸಿಗೊಂದು ಏನನ್ನು ಮಾರುತ್ತಾಳೆ?

a) ಕುಡಕಿ b) ಮಡಿಕೆ

c) ಗುಡಾಣ d) ಗಡಿಗೆ.

7. ಕನ್ನಡ ಭಾಷೆಯ ಲಿಪಿಯನ್ನು ಲಿಪಿಗಳ ರಾಣಿ ಎಂದು ಕರೆದವರು ಯಾರು?

a) ಸರೋಜಿನಿ ನಾಯ್ಡು b) ಮದರ ತರೆಸಾ

c) ವಿನೋಬಾ ಭಾವೆ d) ಒನಕೆ ಓಬವ್ವ.

8. ಮೋಹಿನಿಗೆ ಮರುಳಾದವರು ಯಾರು?

a) ಮಾನವನು b) ಮಹಿಳೆಯರು

c) ಮೂರ್ಖದಾನವರ d) ಯಾರು ಇಲ್ಲ.

9. ಹೊಸಬಾಳಿನ ಗೀತೆ ಕವನದ ಕವಿ ಯಾರು?

a) ಕುವೆಂಪು b) ಬೇಂದ್ರೆ c) ಶಿವರುದ್ರಪ್ಪ d) ಡಿ.ವಿ.ಜಿ.

10. ಅವರವರ ಭಕುತಿಗೆ ಅವರವರ ಭಾವಕ್ಕೆ ಎಂದು ಹಾಡಿದವರು ಯಾರು?

a) ಶಿಶುನಾಳ ಶರೀಫ b) ಕುವೆಂಪು

c) ಡಿ.ವಿ.ಜಿ d) ಬಾಲಲೀಲಾ ಮಹಾಂತ ಶಿವಯೊಗಿ.

11. ಅಲ್ಲಮಪ್ರಭು ಹೆಸರುವಾಸಿಯಾಗಿದ್ದು ------ ಗಳಿಗೆ.

a) ಜನಪದ b) ಕೀರ್ತನೆ c) ವಚನ d) ತತ್ವಪದ.

12. ಅಕ್ಕಮಹಾದೇವಿಯವರ ಅಂಕಿತನಾಮ ಯಾವುದು?

a) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ b) ಅಲ್ಲಮಪ್ರಭು

c) ಕೂಡಲಸಂಗಮದೇವ d) ಗುಹೇಶ್ವರ.

13. ಕುಪ್ಪಳ್ಳಿ ವೆಂಕಟಪ್ಪ ಪುಟ್ಟಪ್ಪ ಇವರ ಕಾವ್ಯನಾಮ ತಿಳಿಸಿ.

a) ದ.ರಾ.ಬೇಂದ್ರೆ b) ಕುವೆಂಪು c) ಡಿ.ವಿ.ಜಿ d) ತ.ರಾ.ಸು.

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14. ಕರ್ನಾಟಕ ಗತವೈಭವ ಗ್ರಂಥದ ಲೇಖಕರು ಯಾರು?

a) ಕುವೆಂಪು b) ಮಾಸ್ತಿ

c) ಜಿ.ಎಸ್,ಎಸ್ d) ಆಲೂರು ವೆಂಕಟರಾಯರು

15. 'ಅಟ್ಟಕೇರಿಸು' ಈ ನುಡಿಗಟ್ಟಿನ ವಿಶೇಷಾರ್ಥ--------.

a) ಅಣರೆಸು b) ತೆಗಳು

c) ಹೊಗಳು d) ನಗಿಸು.

16. ಸಂಗೀತಪುರವು ಈ ಹಿಂದೆ ಯಾರ ಊರಾಗಿತ್ತು?

a) ಬೌದ್ಧರ b) ತಮಿಳರ

c) ಪಾರ್ಸಿಗಳ d) ಜೈನರ.

17. 1955ರಲ್ಲಿ ರಾಯಚೂರಿನಲ್ಲಿ ನಡೆದ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಷತ್ತಿನ ಸಮ್ಮೇಳನದ ಅಧ್ಯಕ್ಷರು ಆಗಿದ್ದವರು ಯಾರು?

a) ಶ್ರೀರಂಗರು b) ದಾ.ರಾ.ಬೇಂದ್ರೆ

c) ಚಂದ್ರಶೇಖರ ಕಂಬಾರ d) ಡಿ.ವಿ.ಜಿ.

18. ಅಲ್ಲಮಪ್ರಭುಗಳ ವಚನದ ಕಾವ್ಯನಾಮ ಯಾವುದು?

a) ಗುಹೇಶ್ವರ b) ಸಂಗಮದೇವ

c) ಚೆನ್ನಮಲ್ಲಿಕಾರ್ಜುನ d) ಶಿವೇಶ್ವರ.

19. ಕುರುಡು ಕಾಂಚಾಣವನ್ನು ಯಾವ ಕವನ ಸಂಕಲನದಿಂದ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ.

a) ನಾಕುತಂತಿ b) ಮರಳಿ ಮಣ್ಣಿಗೆ

c) ಕಲ್ಲು ಕರಗುವ ಸಮಯ d) ನಾದಲೀಲೆ.

20. "ನಾಡ ಗೀತೆ"ಯನ್ನು ರಚಿಸಿರುವ ಕವಿ ಯಾರು?

a) ಬೇಂದ್ರೆ b) ಕುವೆಂಪು

c) ರಾಜರತ್ನಂ d) ಪಿ. ಲಂಕೇಶ್.

21. ಮೈಸೂರು ರಾಜ್ಯಕ್ಕೆ ಕರ್ನಾಟಕ ಎಂದು ನಾಮಕರಣ ಮಾಡಿದ ವರ್ಷ -------.

a) 1973 b) 1964 c) 1955 d) 1947.

22. ಸರ್. ಎಂ. ವಿಶ್ವೇಶ್ವರಯ್ಯನವರು ಪಡೆದಿರುವ ದೇಶದ ಅತ್ಯತ್ತಮ ಪ್ರಶಸ್ತಿ ಯಾವುದು?

a) ಪದ್ಮಶ್ರೀ b) ಪದ್ಮಭೂಷಣ

c) ಪದ್ಮವಿಭೂಷಣ d) ಭಾರತ ರತ್ನ.

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23. ಕರ್ನಾಟಕ ಸರ್ಕಾರದ ಆಡಳಿತ ಭಾಷೆ ಯಾವುದು?

a) ಕನ್ನಡ b) ತಮಿಳು c) ತೆಲಗು d) ಹಿಂದಿ.

24. ಕರ್ನಾಟಕದ ರಾಜಧಾನಿ ಯಾವುದು?

a) ಮೈಸೂರು b) ಬೆಂಗಳೂರು

c) ಧಾರವಾಡ d) ಬೆಳಗಾವಿ.

25. ಸಂತ ಶಿಶುನಾಳ ಶರೀಫರು ಹೆಸರುವಾಸಿಯಾಗಿದ್ದುದು ----- ಗಳಿಗೆ.

a) ಜನಪದ b) ಕೀರ್ತನೆ c) ವಚನ d) ತತ್ವಪದ.

26. ಬಟ್ಟೆ ಮೇಲಿನ ಮುದ್ರಣ ಕಲೆಗೆ ಯಾವ ದೇಶವು ಮೂಲ ನೆಲೆಯಾಗಿದೆ.

a) ಇಂಗ್ಲೇಂಡ್ b) ಫ್ರಾನ್ಸ c) ಭಾರತ d) ಅಮೇರಿಕಾ.

27. ಪ್ರಹ್ಲಾದನ ತಾಯಿಯ ಹೆಸರೇನು?

a) ರುದ್ರಮ್ಮ b) ಕಾಳಮ್ಮ c) ರುಕ್ಮಿಣಿ d) ತಾಯಮ್ಮ.

28. ಸಂವಿಧಾನದ ಯಾವ ಅನುಚ್ಛೇದದ ಅನುಸಾರ ರಾಜ್ಯಗಳಲ್ಲಿ ಬಳಕೆಯಾಗುವ ಭಾಷೆಗಳನ್ನೆ ಆಡಳಿತ ಭಾಷೆಯೆಂದು ತೀರ್ಮಾನಿಸಲಾಗಿದೆ.

a) 343 b) 443 c) 543 d) 643.

29. ಮೇಗಾನೆ ಗ್ರಾಮದಲ್ಲಿ ವಾಸವಿರುವ ಬುಡಕಟ್ಟು ಜನಾಂಗದ ಹೆಸರೇನು?

a) ಕುಣಬಿ b) ನಾಗ c) ಭದ್ರ d) ಮಲಯ.

30. "ಕರ್ನಾಟಕ ಸಂಸ್ಕೃತಿ" ಲೇಖನದ ಕರ್ತೃ ಯಾರು?

a) ಕುವೆಂಪು b) ಹಂಪ ನಾಗರಾಜಯ್ಯ

c) ಗೊವಿಂದ ಪೈ d) ಬೇಂದ್ರೆ.

31. ಕಾಲಿಗೆ ಬಿದ್ದವರ ಯಾವುದು ತುಳಿಯುತ್ತಲಿತ್ತು?

a) ಹಣ b) ಕಾಂಚಾನ c) ಬಂಗಾರ d) ಕುರುಡ ಕಾಂಚಾಣ.

32. ಭಾಷೆಗೆ ಎಷ್ಟು ಪ್ರಮುಖ ಕೌಶಲ್ಯಗಳು ಇರುತ್ತವೆ?

a) 10 b) 20 c) 08 d) 04

33. ಆಡಳಿತ ಭಾಷೆ ಯಾವಾಗಲೂ ------ ಇರಬೇಕು.

a) ಕಷ್ಟಕರವಾಗಿ b) ಅರ್ಥವಾಗದಂತೆ

c) ಸರಳ ಮತ್ತು ಸ್ಪಷ್ಟವಾಗಿ d) ಗೊಂದಲದಿಂದ.

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34. ಸರ್ಕಾರಿ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ಮಾಸ್ತರಿಗೆ ಸಹಾಯ ಮಾಡಿದ ದಾದಿ ಯಾರು?

a) ಚಾಂದಿನಿ b) ರಾಧ c)ಫಾತಿಮಾ d) ರುಕ್ಮಿಣಿ.

35. ------- ಭಾರತದ ಕೆಲವು ನೇಕಾರರು ಚಿಂದಿ ಬಟ್ಟೆಯ ಕಂಬಳಿಗಳನ್ನು ತಮ್ಮ ಮಗ್ಗಗಳಲ್ಲಿ ನೇಯುವರು.

a) ಉತ್ತರ b) ಪೂರ್ವ c) ಪಶ್ಚಮ d) ದಕ್ಷಿಣ.

36. ಎಲ್ಲರನು ಸಲಹುವವನು ಯಾರು?

a) ಪುರಂದರ ವಿಠಲ b) ಕಾಗಿನೆಲೆ ಆದಿಕೇಶವ

c) ಮಲ್ಲಿಕಾರ್ಜುನ d) ಕೂಡಲಸಂಗಮದೇವ.

37. ಶ್ರೀಮಂತರು ಯಾರ ಕಣ್ಣಿನ ಕವಡೆಯನ್ನು ಜೋಮಾಲೆ ಮಾಡಿಕೊಂಡು ಹಾಕಿಕೊಳ್ಳುವರು?

a) ಬಾಣಂತಿ b) ಸಣ್ಣ ಕಂದಮ್ಮ c) ಮುದುಕರು d) ಹೆಂಗಸರು.

38. ಯಾವ ಜನಾಂಗದ ಚಿತ್ರಿಕರಣ ಲೇಖಕರ ಮನದಲ್ಲಿತ್ತು?

a) ಗೊಂಡ b) ತೊಡವ c) ನಾಗ d) ಅಲೆಮಾರಿ.

39. ಕುಂಬಾರಕಿ ಯಾವುದರ ಮೇಲೆ ಮುಗಿಯನ್ನು ಇಡುವಳು?

a) ಕಲ್ಲು b) ಗಡಿಗೆ c) ವಸುಧೆ d) ಕಟ್ಟೆ.

40. ವಿಷಸರ್ಪಗಳಿಗೆ ಯಾವುದರ ಗೂಡು ಹುತ್ತವಾಗುವುದು?

a) ಗೆದ್ದಲಿರುವೆ b) ಉಡ c) ಇಲಿ d) ಗೀಜಗ.

41. ತಾಳಗುಪ್ಪ ಗಿರಿಜನ ಶ್ರಮ ಶಾಲೆಯ ಮಾಸ್ತರರು ಯಾರು?

a) ಸಮಪಾಲುಗೋಪಣ್ಣ b) ಪ್ರಹ್ಲಾದ c) ಹುಚ್ಚಪ್ಪ d) ಕರೀಂಖಾನ

42. ಗೋಪಣ್ಣ ಮಾಸ್ತರು ಕಣಗಲಿ ಗಿಡದಲ್ಲಿ ಏನು ನೋಡಿದರು?

a) ಹೂ b) ಹಣ್ಣು c) ಬಟ್ಟೆ d) ಜನಿವಾರ

43. ಹಾಡುವಳ್ಳಿಗೆ ಹಿಂದೆ ------ಹೆಸರಿತ್ತು.

a) ಸಂಗೀತಪುರ b) ಭಟ್ಕಳ c) ಸಾಗರ d) ಕಾರವಾರ

44. ಹೊಸಚಿಗುರು ----- ಕೂಡಿರಲು ಮರಸೊಬಗು

a) ಹೊಸ ಎಲೆ b) ಹೊಸ ಹಸಿರು c) ಹೊಸಕಾಂಡ d) ಹಳಬೇರು

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45. "ಪರಿಸರ, ಪರಂಪರೆ ಹಾಗೂ ಪ್ರತ್ಯಕ್ಷ ಜೀವನದ ಅನೇಕ ಸಂಸ್ಕಾರಗಳ ಮೂಲಕ ಮನುಷ್ಯನ ಅಂತರಂಗ ಪಡೆಯುವ ಪರಿಪಕ್ವತೆ" ಯನ್ನು ------ ಎನ್ನಬಹುದು.

a) ಕೆಲೆ b) ಸಂಸ್ಕಾರ c) ಸಂಸ್ಕೃತಿ d) ಕೆಂಪು

46. ಕುಣಬಿ ಜನರ ಮುಖ್ಯವಾದ ಹಬ್ಬ ಯಾವುದು?

a) ಯುಗಾದಿ b) ದಸರಾ c) ಹೋಳಿ ಹುಣ್ಣಿಮೆ d) ದೀಪಾವಳಿ

47. ಬಣ್ಣಗಳನ್ನು ನೀಡುವ ಗಿಡಗಳು ಭಾರತದಲ್ಲಿ ಎಷ್ಟವೆ.

a) 400 b) 300 c) 500 d) 600.

48. ಕರಕುಶಲ ಕಲೆಗಳಿಗೆ ಪೆಟ್ಟು ಬಿದ್ದಿದ್ದು ಯಾವುದರಿಂದ?

a) ಜಾಗತೀಕರಣ b) ಖಾಸಗೀಕರಣ

c) ಕೈಗಾರಿಕರಣ d) ಸೋಂಬೇರಿತನ.

49. ಸತಿ ಪದದ ಅರ್ಥವೇನು?

a) ಹೆಂಡತಿ b) ಪತಿ c) ಮಕ್ಕಳು d) ತಾಯಿ.

50. ವಿದ್ಯಾವರ್ದಕ ಸಂಘ ಎಲ್ಲಿ ಸ್ಥಾಪನೆಯಾಯಿತು?

a) ಬೆಂಗಳೂರು b) ಧಾರವಾಡ

c) ಶಿವಮೊಗ್ಗ d) ಮೈಸೂರು.

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CBCS SCHEME

BSFHK158/BSFHK258/22BD27

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 2024

Scientific Foundations of Health

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. According to WHO, what is health?
   a) Health is a state of complete physical, mental and social well being and not the absence of disease.
   b) Health is not a state of complete physical, mental and not the absence of disease.
   c) Complete physical, mental and social well being and not the presence of disease
   d) None of these

2. Advantages of good health
   a) Reduces confidence
   b) Improves brain health and confidence
   c) Increased stress
   d) Reduces performance

3. What is balanced nutrition?
   a) A healthy nutrition diet provides the body with non essential nutrition.
   b) A healthy nutrition diet provides the body with essential nutrition: fluid, macronutrients such as protein, vitamins, adequate fibre and food energy.
   c) Nutrition is adequate fibre and food energy
   d) None of these

4. What are the examples of positive attitude?
   a) Teasing others
   b) Looking at the glass half full
   c) Looking at the glass half empty
   d) None of these

5. The only disability in life is a _____
   a) Bad attitude
   b) Positive attitude
   c) Commenting on life
   d) Making fun on others

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6. What factors influencing Good Health?
   a) State of our environment and genetics
   b) Income and education
   c) Relationship with friends and family
   d) All of these

7. What is the key to having a positive attitude?
   a) Always do your best
   b) Do only what you think you can
   c) Think you cant do anything
   d) Believe in yourself

8. Individual personality is influenced by
   a) Experiences
   b) Environment
   c) Inherited characteristics
   d) All of these

9. Well being also involved reducing the risk of an injury or health issue by
   a) Minimizing hazards in the work place
   b) Using contraceptive when having sex
   c) Avoiding the use of tobacco, alcohol and illegal drug
   d) All of these

10. How does personality affect health?
    a) Failure in handle stress
    b) Failure in activity level
    c) Avoiding bad habits
    d) None of these

11. The source of antioxidant and minerals
    a) Vegetables and fruit
    b) Coke and pizza
    c) Mutton and meat
    d) Baked foods

12. Which of the following is whole grain food?
    a) Brown rice and wild rice
    b) Oat's meal
    c) Ragi ball and Barley malt
    d) All of these

13. Excessive intake of food leads to _____
    a) Obesity
    b) Fit body
    c) Over smartness
    d) Lowers body calorie

14. Which of the following components are major nutrients in our food?
    a) Carbohydrates
    b) Lipids and proteins
    c) Vitamins and Minerals
    d) All of these

15. Egg is a rich source of _____
    a) Proteins
    b) Vitamins
    c) Minerals
    d) None of these

16. Potatoes, beans, pulses and oats are rich in _____
    a) Proteins
    b) Vitamins
    c) Minerals
    d) Carbohydrates

17. Which of the following food items provides dietary fibre?
    a) Pulses
    b) Whole grain
    c) fruits and vegetables
    d) Pizza

18. Which of the following food components are rich in fat?
    a) Rice and Maize
    b) Milk, egg and beans
    c) Butter, cheese and oil
    d) None of these

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19. Which of the following vitamin helps in blood clotting
a) Vitamin – A
b) Vitamin – C
c) Vitamin – D
d) Vitamin – K

20. Guava, Lemon, Orange and Tomato are rich in
a) Vitamin – A
b) Vitamin – B
c) Vitamin – C
d) Vitamin – D

21. How many minutes should an average person walk a day?
a) 30 minutes
b) 40 minutes
c) 20 minutes
d) 60 minutes

22. What is the recommended daily water intake?
a) 0.5 litre
b) 1 litre
c) 2 litres
d) 4 litres

23. Oral communication ensures _____ and _____
a) Fluency and speed
b) Adequate response and immediate response
c) Speedy interaction and speed response
d) Fast and attention

24. The primary goal of communication is to
a) To create barriers
b) To create noise
c) To effect a change
d) None of these

25. Body language play a important role in _____
a) Communication
b) Judgement
c) Both A and B
d) None of these

26. Ways to improve the communication skill:
a) Active listening skill
b) Passive listening skill
c) Both A and B
d) None of these

27. Which of the following is not a communication skill?
a) Listening
b) Feedback
c) Conversation
d) Playing game

28. Which of the following is barrier of communication?
a) No interest in conversation
b) Ability to listen
c) Transparency and Trust
d) None of these

29. What is not a basic instincts of Human life?
a) Self perseverance
b) Sexual instinct
c) Social instinct
d) Making wealth and property all time.

30. Which of the following social engineering changes the Health behaviours?
a) Banning the use of certain drugs
b) Providing purified water to people
c) Legalizations can be passed to make environment healthier
d) All of these

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31. Factors leading to addiction
a) Environment b) Genes
c) Both a and b d) None of these

32. Which of the following is not a type of addiction?
a) Drug b) Alcohol c) Behavioural d) Yoga practicing

33. Symptoms of substance use disorder
a) Impaired control b) Social problem
c) Having intense usage for the drug d) All of these

34. Recognizing the addictions
a) Problems at work b) Physical health issue
c) Changes in behavior d) All of these

35. Which of the following is a protective factor of addictive people?
a) Good self control b) Parental monitoring and support
c) Positive relationships d) All of these

36. Which is an example of health hazard?
a) Cardiovascular disease b) Cancer
c) Stroke d) All of these

37. What are the different sources of infection?
a) Patients b) Health care workers
c) Visitors and Household workers d) All of these

38. Which one is a type of infective agent?
a) Bacteria b) Virus c) Both a and b d) None of these

39. How to reduce risk for good health?
a) Be a non-smoker b) Be physically active every day
c) Achieve a healthy weight d) All of these

40. Which is not the risk factor for addictive people?
a) Aggressive behavior in childhood b) Lack of parental supervision
c) Good social skills d) Poor social skills

41. Which is an example for acute health change condition?
a) Heart disease b) Cancer
c) Diabetes d) Cold and cough

42. Health is _____
a) Money b) Wealth c) Gold d) Diamond

43. Which of the following are not major health issues?
a) Malnutrition b) Obesity c) Anaemia d) Fever

44. Preventive measures against disease for good health
a) Avoid touching your face b) Stay home if you are sick
c) Avoid contaminated food and water d) All of these

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45. Who proposed the biopsychosocial model?
a) Freud b) Sontag c) Engel d) None of these

46. Which of the following charters defined health promotion as "the process of enabling people to increase control over and to improve their health"?
a) Charter of United Nations (1945) b) Tokyo Charter (1946)
c) Ottawa Charter (1986) d) None of these

47. HIV is a retrovirus that infects and colonizes cells in the _____
a) Immune system
b) Immune system and central nervous system
c) Endocrine system
d) Immune system and Endcrine system

48. In 2015, the global prevalence of HIV infection was _____
a) 0.2% b) 0.4% c) 0.6% d) 0.8%

49. In H.J. Eysenck's twentieth – century theory of personality, how did he reinterpret the classical phlegmatic temperament?
a) Stable extrovert b) Stable introvert
c) Unstable extrovert d) Unstable introvert

50. In which year WHO did the first express "the right to health" as a fundamental human right?
a) 1946 b) 1952 c) 1987 d) 2000

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CBCS SCHEME

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BPHYS102/202

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Applied Physics for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. VTU Hand book is permitted.

		Module – 1	M	L	C
Q.1	a.	Explain the construction and working of semiconductor LASER with a neat sketch and energy level diagram.	9	L2	CO1
	b.	Discuss different types of optical fibers based on modes of propagation and RI profile.	6	L2	CO1
	c.	An optical fiber has refractive index of core and cladding of 1.55 and 1.50, respectively. Calculate its numerical aperture and angle of acceptance if it is kept in air.	5	L3	CO5
		OR			
Q.2	a.	Obtain the expression for energy density of radiation in term of Einstein's A and B coefficients.	8	L2	CO1
	b.	Define numerical aperture and derive an expression for numerical aperture of an optical fiber.	7	L2	CO1
	c.	In a diffraction grating experiment the Laser light undergoes first order diffraction at an angle of 19.3°. Find the wavelength of Laser light. Given the grating constant $d = 1.98 \times 10^{-6}$m.	5	L3	CO5
		Module – 2			
Q.3	a.	Setup one dimensional time independent Schrodinger wave equation.	8	L2	CO
	b.	State Heisenberg's uncertainty principle and apply the same to prove the non-existence of free electron inside the nucleus.	7	L2	CO
	c.	An electron is bound in an infinite potential well of width 0.18nm. Find its energy values in the first two allowed energy states.	5	L3	CO2
		OR			
Q.4	a.	Obtain an expression for Eigen function and Eigen energy values for a particle in an infinite potential well of width 'a'.	9	L2	CO2
	b.	What is wave function? Mention the properties of wave function and give its significance.	6	L2	CO2
	c.	Calculate the kinetic energy of a neutron in eV. Given: de –Broglie wave length is 1 Å and mass of neutron, $m_n = 1.674 \times 10^{-27}$Kg.	5	L3	CO2
		Module – 3			
Q.5	a.	Distinguish between classical computing and Quantum computing.	6	L2	CO2
	b.	Explain the CNOT gate and its operation on four different input states.	6	L2	CO2
	c.	Apply Pauli matrices on the state $\|0\rangle$ and $\|1\rangle$.	8	L3	CO2
		OR			
Q.6	a.	Explain the working of T-gate mentioning its matrix representation and truth table.	7	L2	CO2
	b.	Explain Orthogonality and Orthonormality with an example of each.	8	L2	CO2

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	c.	A linear operator 'X' operates such that X|0> = |0> and X|1> = i|1>. Find the matrix representation of 'X'.	5	L3	CO2
		Module – 4			
Q.7	a.	Mention the failures of classical free electron theory and explain the assumptions of Quantum free electron theory of metals.	7	L2	CO3
	b.	Explain Meissner's effect and the variation of critical field with temperature.	8	L2	CO3
	c.	A lead wire has a critical field of 6.5×10^5 A/m at 0 Kelvin. The critical temperature is 7.18K. At what temperature the critical field will drop to 4.5×10^3A/m.	5	L3	CO3
		OR			
Q.8	a.	Define Fermi factor and explain the variation of Fermi factor with temperature and energy.	8	L2	CO3
	b.	Differentiate Type – I and Type – II superconductors.	8	L2	CO3
	c.	Calculate the probability of occupation of an energy level 0.02eV above level at temperature 27°C.	4	L3	CO3
		Module – 5			
Q.9	a.	Explain the importance of (i) size and scale and (ii) weight and strength, in animation.	7	L2	CO4
	b.	Mention the general pattern of Monte – Carlo method and hence explain the procedure to find the value of 'π'.	8	L2	CO4
	c.	In the case of animating a jump, the jump height is 2.5m and jump magnification is 5. Calculate the push height and push acceleration. Given gravitational acceleration is 10m/s.	5	L3	CO5
		OR			
Q.10	a.	Describe jumping and parts of jump.	9	L2	CO4
	b.	Distinguish between descriptive and inferential statics.	6	L2	CO4
	c.	On a particular place, volcanic eruption occurs once in every 100years on an average. Calculate the probability of volcanic eruption in a 100 years interval for K = 0, 1 and 2, assuming the Poisson's model appropriate.	5	L3	CO5

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BPOPS103/203

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Principles of Programming using C

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define Computer. Explain the various types of computer.	10	L2	CO1
	b.	Explain the basic structures of C program in detail. Write a sample program to demonstrate the components in the structure of C program.	10	L2	CO2
		OR			
Q.2	a.	Explain scanf( ) and printf( ) functions in C language with syntax and example.	08	L2	CO2
	b.	What is variable? Explain rules for constructing variable in C. Give example for valid and invalid variable.	06	L2	CO2
	c.	Illustrate the flowchart and write a C program which takes as input p, t, v compute the simple interest and display result.	06	L2	CO2
		Module – 2			
Q.3	a.	Explain the following operators in 'C': i) Relational ii) Logical iii) Conditional iv) Bitwise.	08	L2	CO2
	b.	Explain for loop statement with syntax and example program.	06	L2	CO2
	c.	Write a C program to simulate simple calculator that performs arithmetic operations using switch statement. Error message should be displayed if any attempt is made to divide by zero.	06	L2	CO3
		OR			
Q.4	a.	Explain if, if-else, nested if and cascaded if-else statements with syntax and example.	08	L2	CO2
	b.	Write a C program that takes three coefficient (a, b, c) to calculate roots of quadratic equation, print all possible roots with appropriate messages for a set of coefficients.	06	L2	CO5
	c.	Explain break and continue statements with respect while, do-while and for loops.	06	L2	CO2
		Module – 3			
Q.5	a.	Define function. Explain categories of user defined functions.	10	L2	CO4
	b.	Define two-dimension array. Write a C program to multiply 2 matrix by ensuring their multiplication compatibility.	10	L2	CO3
		OR			
Q.6	a.	Explain function call, function definition and function prototype with syntax and example for each.	10	L2	CO4
	b.	Write a C program to implement Binary search for integers.	05	L2	CO3
	c.	What is Recursion? Write a C program to compute factorial of number using recursion.	05	L2	CO3
		Module – 4			
Q.7	a.	Define string. Explain any four string manipulating functions with example.	10	L2	CO3
	b.	Write a C program to concatenate two strings without using built-in function strcut( ).	05	L2	CO3
	c.	Explain string unformatted input/output functions with example.	05	L2	CO3

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		OR			
Q.8	**a.**	Define pointer. Explain pointer variable declaration and initialization with suitable example.	**08**	**L2**	**CO3**
	b.	Explain pass by value and pass by address with example.	**04**	**L2**	**CO3**
	c.	Write a C program using pointers to compute sum, mean, standard deviation of all elements stored in an array of n real numbers.	**08**	**L2**	**CO3**
		Module – 5			
Q.9	**a.**	Explain structure declaration and how structure member are accessed with example.	**10**	**L2**	**CO3**
	b.	Implement a structure to read, write and compute average marks and the students scoring above and below average of class N students.	**10**	**L3**	**CO5**
		OR			
Q.10	**a.**	Compare between structure and union with syntax and example.	**06**	**L2**	**CO3**
	b.	Explain fopen( ), fclose( ), fscanf( ) and fprintf( ) with syntax and example program considering all above functions.	**10**	**L2**	**CO4**
	c.	What are enumeration variable? How are they declared?	**04**	**L2**	**CO3**

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BESCK104D/BESCKD104

First Semester B.E./B.Tech. Degree Examination, June/July 2024
Introduction to Mechanical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.
3. Write neat sketches wherever it is necessary.

		Module – 1	M	L	C
Q.1	a.	Explain briefly the emerging trends of mechanical engineering in Automotive and Aerospace sector.	10	L2	CO1
	b.	Describe the following : i) Biofuels ii) Nuclearfuels.	10	L2	CO1
		OR			
Q.2	a.	Describe the construction and working of Hydroelectric power plant.	8	L2	CO1
	b.	Explain the utilization of solar energy using flat plate collector with a schematic diagram.	8	L2	CO1
	c.	Outline the following : i) Environmental issues ii) Fossil fuels.	4	L1	CO1
		Module – 2			
Q.3	a.	Explain the working principle of Lathe with line diagram.	7	L2	CO2
	b.	Illustrate the following operations of drilling with sketches. i) Boring ii) Reaming iii) Drilling.	6	L3	CO2
	c.	Explain the following milling operations i) Plain milling ii) Slot milling.	7	L2	CO2
		OR			
Q.4	a.	Define additive manufacturing. List the various steps involved in Additive manufacturing.	6	L1	CO2
	b.	Describe the various components of CNC with Schematic diagram.	8	L2	CO2
	c.	List the advantages and applications of 3D printing (3 each).	6	L1	CO2
		Module – 3			
Q.5	a.	Explain the working of the 4 stroke diesel engine with sketches plot the PV diagram.	12	L2	CO3
	b.	List the differences between 4 stroke petrol and diesel engine (any 8).	8	L1	CO3
		OR			
Q.6	a.	Describe Electric vehicles. Explain the components and working of the electric vehicles.	8	L2	CO3
	b.	Describe Hybrid vehicles. Explain the components of Hybrid vehicles.	8	L2	CO3
	c.	List the advantages and limitation of electric vehicles (any two each).	4	L1	CO3
		Module – 4			
Q.7	a.	Recite the classification of metals.	5	L1	CO4
	b.	Describe the following materials i) Plastics ii) Shape memory alloys.	6	L2	CO4
	c.	Observe and describe the three types of gas flames with sketches.	9	L2	CO4

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		OR			
Q.8	**a.**	List the difference between soldering, Brazing and welding (at least 5).	**10**	**L1**	**CO4**
	b.	Describe the construction and working of Arc welding. Process with neat sketch.	**10**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Define Mechatronics. List the differences between open loop and closed loop system (any 6).	**8**	**L1**	**CO5**
	b.	Based on the configuration, explain the four types of Robots.	**8**	**L2**	**CO5**
	c.	List the various applications of robots in various fields.	**4**	**L3**	**CO5**
		OR			
Q.10	**a.**	Define Automation. Explain the three types of Automation.	**7**	**L1**	**CO5**
	b.	Describe the basic elements of automation system with block diagram.	**8**	**L2**	**CO5**
	c.	Define IoT. List the characteristics of IoT (any 6).	**5**	**L1**	**CO5**

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BESCK204D/BESCKD204

Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Introduction to Mechanical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	a.	With a neat sketch explain the working principle of Nuclear Power Plant.	10	L2	CO1
	b.	Write a short note on the following: i) Global Warming ii) Ozone Depletion	10	L2	CO1
		OR			
Q.2	a.	Elucidate the emerging trends and technologies in the following sectors: i) Manufacturing sector ii) Energy sector	08	L2	CO1
	b.	With a neat sketch explain the working principle of Hydro Power Plant.	08	L2	CO1
	c.	What is the role of mechanical engineering in Industries and Society?	04	L1	CO1
		Module – 2			
Q.3	a.	What is CNC? Explain the basic components of CNC machine with a neat sketch.	10	L1 L2	CO2
	b.	List different operations that can be performed on Lathe Machine and explain the following with a neat sketch: i) Turning ii) Knurling	10	L1 L2	CO2
		OR			
Q.4	a.	List the operations that are performed on Drilling machine and explain the below: i) Boring ii) Drilling	10	L1 L2	CO2
	b.	List the advantages and applications of CNC.	06	L1	CO2
	c.	Write a short note on 3D printing.	04	L2	CO2
		Module – 3			
Q.5	a.	With a neat sketch explain the working principle of 4 stroke petrol engine along with P.V. diagram.	10	L2	CO3
	b.	Explain the components of Electric and Hybrid vehicle with a neat sketch.	10	L2	CO3
		OR			
Q.6	a.	With a neat sketch explain the working principle of 4 stroke CI engine along with P.V diagram.	10	L2	CO3
	b.	Discuss the concept of Electric and Hybrid vehicles. Also list the advantages and disadvantages of EVs and Hybrid vehicles.	10	L2	CO3
		Module – 4			
Q.7	a.	Classify engineering materials.	04	L2	CO4
	b.	Differentiate between Soldering, Brazing and Welding.	10	L2	CO4
	c.	Write a short note on Diamond and Silica materials.	06	L2	CO4
		OR			
Q.8	a.	Explain the working principle of Electric Arc Welding with a neat sketch.	10	L2	CO4
	b.	Explain different types of Flames used in Gas welding.	06	L2	CO4
	c.	Write a short note on Shape Memory Alloys.	04	L2	CO4
		Module – 5			
Q.9	a.	Define Automation. Explain the types of automation.	10	L1 L2	CO5
	b.	With an example explain open and closed loop mechatronic system.	10	L2	CO5
		OR			
Q.10	a.	Define IoT and explain the characteristics of IoT.	10	L1 L2	CO5
	b.	Explain the functional blocks of IoT with a neat sketch.	10	L2	CO5

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BPLCK105B/ BPLCKB105

First Semester B.E./B.Tech Degree Examination, June/July 2024
Introduction to Python Programming

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define comparison operator and list its type. Give the difference between = = and = operator.	4	L1	CO1
	b.	Explain flow control statement in detail with if, else, whileloop and forloop.	10	L2	CO1
	c.	Build a function to calculate factorial of a number. Develop a program to compute binomial coefficient.	6	L3	CO1
		OR			
Q.2	a.	Define exception in python programming and give the basic form of an exception handling block with an example.	8	L1	CO1
	b.	Explain how to define function and to make a function call by passing an argument with an example.	4	L2	CO1
	c.	Develop a python program to read the name and year of birth of a person and to display whether the person is a senior citizen or not.	8	L3	CO1
		Module – 2			
Q.3	a.	Explain in detail about append( ) and index( ) function with respect to list in python.	6	L2	CO2
	b.	Develop suitable python program with nested list to explain copy( ) and deepcopy( ) methods.	6	L3	CO2
	c.	Tuples are immutable. Explain with an example.	8	L2	CO2
		OR			
Q.4	a.	Explain the below methods in list with suitable code : i) remove( ) ii) sor( ) iii) reverse( ).	6	L2	CO2
	b.	Outline python dictionaries with some of their methods.	8	L2	CO2
	c.	Explain Nested dictionaries with an example.	6	L2	CO2

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		Module – 3			
Q.5	**a.**	Develop a code to print to most frequently appearing words in a text file.	**10**	**L3**	**CO3**
	b.	Explain below python string handling function with example : i) split( ) ii) rjust( ) iii) partition( ) iv) join( ) v) startwith( ).	**10**	**L2**	**CO3**
		OR			
Q.6	**a.**	Explain the method to restore the data to variable from the hard drive.	**10**	**L2**	**CO3**
	b.	Develop a program to sort the contents of a tent file and write the sorted content into a separate text file.	**10**	**L3**	**CO3**
		Module – 4			
Q.7	**a.**	Explain various shell utilities function.	**10**	**L2**	**CO3**
	b.	Develop a program to read and to extract all the files and folder into a ZIP file by using relevant methods.	**10**	**L3**	**CO3**
		OR			
Q.8	**a.**	Explain permanent delete and safe delete with a suitable python programming.	**10**	**L2**	**CO3**
	b.	Define Assertion. Explain the use of Assertion in a Traffic light simulation with a python program.	**10**	**L2**	**CO3**
		Module – 5			
Q.9	**a.**	Define pure function and modifier. Explain the role of pure function and modifier in application development.	**10**	**L2**	**CO3**
	b.	Explain the methods _int_ and _str_ with example.	**10**	**L2**	**CO3**
		OR			
Q.10	**a.**	Define operator overloading. Explain with suitable python program.	**10**	**L2**	**CO4**
	b.	Define polymorphism and give a suitable python program.	**10**	**L1**	**CO4**

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BPLCK205B / BPLCKB205

Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Introduction to Python Programming

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain with example print( ), input( ) and len( ).	6	L2	CO1
	b.	Explain elif, for, while statement in python with example.	6	L2	CO1
	c.	Develop a program to generate Fibonacci sequence of Length(N).Read N from the console.	8	L3	CO1
		OR			
Q.2	a.	What are functions? Explain python function with parameters and return statement.	6	L2	CO1
	b.	How to handle exception in python with example.	6	L2	CO1
	c.	Explain Local and Global scope with variables for each.	8	L2	CO1
		Module – 2			
Q.3	a.	Explain the use of in and not in operator in list with examples.	6	L2	CO2
	b.	Explain negative Indexing, slicing, index( ), append( ), remove( ), pop( ), insert( ) and sort( ) with suitable example.	8	L2	CO2
	c.	Write about Mutable and Immutable data type in list.	6	L2	CO2
		OR			
Q.4	a.	Explain the following list methods with examples. i) index ( ) ii) append( ) iii) insert( ) iv) sort( ) v) reverse( ) vi) List concatenation and Replication.	10	L2	CO2
	b.	Develop a program to read the student details like Name, USN and Marks in three subjects. Display the student details, total marks and percentage with suitable messages.	10	L3	CO2
		Module – 3			
Q.5	a.	Illustrate with example opening of a life with open( ) function, reading the contents of the file with read( ) and writing to files with write ( ).	10	L2	CO3
	b.	Explain how to save variable with the shelve module.	10	L2	CO3

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		OR			
Q.6	**a.**	Explain the following string methods with examples. i) isalpha( ) ii) isalnum( ) iii) isdecimal( ) iv) isspace( ) v) istitle( ).	**10**	**L2**	**CO3**
	b.	Explain about in and not in operators in string.	**5**	**L2**	**CO3**
	c.	Explain about pyperclip module.	**5**	**L2**	**CO3**
		Module – 4			
Q.7	**a.**	What are Assertions? Write the contents of an assert statement. Explain them with examples.	**10**	**L2**	**CO3**
	b.	Develop a program with a function named DivExp which takes Two parameters a, b and returns a value c(c = a/b), write suitable assertion for a > 0 in function DivExp and raise an exception for when b = 0. Develop a suitable program which reads two values from the console and calls a function DivExp.	**10**	**L3**	**CO3**
		OR			
Q.8	**a.**	Explain about files and folders can be copied using shutil module.	**10**	**L2**	**CO3**
	b.	Explain about Debug control window.	**10**	**L2**	**CO3**
		Module – 5			
Q.9	**a.**	Explain about class and objects.	**10**	**L2**	**CO4**
	b.	Explain about pure function and modifier.	**10**	**L2**	**CO4**
		OR			
Q.10	**a.**	Explain the concept of prototyping Vs planning.	**10**	**L2**	**CO4**
	b.	Explain _init_ and _str_methods with examples.	**10**	**L2**	**CO4**

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Question Paper Version : B

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 2024

Communicative English

(COMMON TO ALL BRANCHES)

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

Complete the following sentences by using the correct question tag : [Q.No. 1 to Q.No. 5]

1. Now you can make question tags _____?
   a) can you b) won't you c) can't you d) will you

2. Few people know that you are an artist _____?
   a) do they b) don't they c) aren't they d) haven't they

3. You are a bit late today _____?
   a) don't you b) aren't you c) are you d) do you

4. We are learning English Grammar _____?
   a) are we b) shall we c) aren't we d) shan't we

5. He was asleep _____?
   a) was he b) wasn't he c) didn't he d) did he

Fill in the blank with the right prefix or suffix [Q.No. 6 to Q.No. 10].

6. She was acting very _____ during the performance.
   a) dislike b) unhappiness c) unlikely d) unhappy

7. The magician's tricks were truly _____?
   a) likeable b) dislike c) impossible d) carefully

8. The puppy showed great _____ when learning new things.
   a) careful b) interest c) unhappiness d) interest

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9. Sarah decided to _____ her wardrobe by adding some new accessories.
a) unlikely b) careful c) enhance d) dislike

10. The Scientist conducted a series of _____ experiments to test the hypothesis.
a) unlikely b) careful c) unprecedented d) dislike

Choose the appropriate form of the verb : [Q.No. 11 to Q.No. 15].

11. Every thing _____ find when its done correctly.
a) works b) working c) worked d) doesn't work

12. None of them _____ able to solve this question.
a) where b) was c) were d) wear

13. A pair of trousers _____ all that I brought along.
a) is b) was c) were d) where

14. The wind _____ furiously.
a) Blue b) blew c) blow d) blown

15. He _____ to his mother every week.
a) right b) wrote c) writes d) write

Choose the right preposition [Q.No. 16 to Q.No 20].

16. Could you put your idea _____ paper?
a) at b) on c) with d) from

17. Do not waste time _____ regret?
a) with b) at c) on d) above

18. He is very simple _____ heart.
a) on b) under c) at d) for

19. She was blind _____ the age of ten.
a) by b) a c) over d) at

20. The shops are _____ walking distance.
a) with in b) with c) by d) on

21. Develop _____
a) ccvcvcc b) cvcvcvc c) cvcvcvcv d) vccvccv

22. Principal _____
a) ccv cv vcc cv b) ccvc cv cv c c) cvc cvcc d) cvc cvc

23. Mathematics _____
a) cvc vcvcvcc b) cvc cv cv cv cvvc c) cvcvcvcvcc d) cvccv

24. Window _____
a) cvccvc b) cvccv c) cvcvc d) cvccv

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25. Degree _____
a) cvccv b) cvccvc c) cvccvvc d) cvccvcv

Choose the correct option from those given in each of the sentences below : [Q.No. 26 to Q.No. 30].

26. Communication is a _____ process of understanding between two or more persons.
a) One - way b) Three - way c) Two - way d) No - way

27. Total number of sounds in English language is _____
a) 8 b) 20 c) 12 d) 44

28. The direction in which the formal communication flow is always _____
a) Upwards b) Downwards c) Horizontal way d) All of these

29. Which one of the following cannot become a type of written communication _____
a) Picture and Visual b) Rules and Instructions
c) Meeting and Conference d) Letter and Suggestion

30. Which of the following is/are not included in the tools of Verbal Communication ____
a) Graphics b) Writing c) Reading d) Listening

Choose the correct word / Phrase / Number. [Q.No. 31 to Q.No. 35].

31. One Vowel in a word usually make _____ sound.
a) Long sound b) Very long sound c) Short sound d) Very short sound

32. Long sound usually have _____ vowels.
a) 3 b) 2 c) 4 d) 6

33. Double 'OO' is pronounced as _____
a) ai b) Za c) U d) e

34. 'G' and 'K' are always silent before _____
a) X b) Z c) N d) S

35. STON is pronounced as _____
a) SH b) SCH c) Shun d) ai

Silent and non silent words : Select the missing or silent letter [Q.No. 36 to Q.No. 40].

36. _____ Sychology.
a) P b) t c) K d) Z

37. _____ rong.
a) X b) C c) W d) F

38. Do you have a _____?
a) doubt b) dot c) dout d) dought

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39. I always _____ in class.
a) lisen b) listen c) lizen d) listen

40. _____ nife.
a) C b) K c) Z d) W

Name the parts of speech which are underlined [Q.No. 41 to Q.No. 45].

41. He walked around the part.
a) Noun b) Preposition c) Verb d) Conjunction

42. She got a strawberry ice – cream.
a) Noun b) Verb c) Interjection d) Adverb

43. Older people have less energy.
a) Verb b) Adjective c) Adverb d) Preposition

44. I like Chips and Cake.
a) Adverb b) Noun c) Conjunction d) Verb

45. My sister answered quietly.
a) Verb b) Adverb c) Noun d) Conjunction

46. I bought _____ pair of shoes.
a) the b) no article c) an d) a

47. I saw _____ movie last night.
a) an b) the c) no article d) a

48. Did you get married after leaving _____ University.
a) no article b) a c) an d) the

49. I was at _____ railway station when you called me.
a) an b) the c) a d) no article

50. _____ Mexico is a beautiful Country.
a) An b) A c) The d) no article

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CBCS SCHEME

BICOK107/207

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Examination, June/July 2024
Indian Constitution

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Our Constitution was adopted on and came into effect on:
   a) 26th Nov 1949 and 26th Jan 1950 b) 26th Jan 1949 and 26th Jan 1950
   c) 26th Feb 1946 and 26th Jan 1949 d) 15th Jan 1949 and 15th Jan 1950

2. The idea of the Constitution of India was flashed for the first time by
   a) Dr. B. R. Ambedkar b) Dr. Rajendra Prasad
   c) Mahatma Gandhiji d) Jawaharlal Nehru

3. The main pillars or organs of our Constitution are
   a) Executive and Judiciary b) Legislature, Executive and Judiciary
   c) Legislature and Judiciary d) Executive and Legislature

4. One of the salient features of our Constitution.
   a) It is fully Rigid b) None of these
   c) It is fully flexible d) It is partly rigid and partly flexible

5. Which Institution is called as 'Interpretor to the Indian Constitution'?
   a) Supreme Court b) Parliament c) President d) Prime Minister

6. The concept of Fundamental Rights are in the nature of _____
   a) Enforceable b) Justiceable c) Exhaustive d) All of these

7. Which part of the Constitution aims at establishing a welfare state in the country?
   a) Preamble b) Fundamental Duties
   c) Fundamental Rights d) Directive principles of state policy

8. A 14 of the Indian Constitution allows:
   a) Class legislation b) Classification
   c) Division of people based on geography d) Both 'a' and 'b'

9. Which article of the Constitution provides protection to the Civil servants?
   a) 288 b) 315 c) 312 d) 311

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10. What is contained in the tenth schedule of the Constitution?
    a) Languages recognized by Constitution
    b) Forms of oath or affirmation
    c) Laws that cannot be challenged in any court of law
    d) Provision regarding disqualification on grounds of defection.

11. The Fundamental Rights granted by the Constitution of India to its citizens cannot be suspended.
    a) Except by an order of the Supreme Court
    b) Under any circumstances
    c) Except by an order of the president during National Emergency
    d) Except through an order of the President during war.

12. Our Constitution grants to the citizens _____ fundamental rights.
    a) Six b) Five c) Ten d) Seven

13. The fundamental duties of Indian citizen are contained in
    a) Part III of Constitution b) Part IV of Constitution
    c) The seventh schedule of the Constitution d) Part IV (a) of the Constitution

14. Preamble declares the objectives of Constitution as
    a) Secularism b) Justice, Liberty, Equality and Fraternity
    c) Democratic Socialist d) Liberalism

15. Secularism means
    a) Absence of State Religion b) Right of religious freedom
    c) Equality of all religions d) All of these

16. Free legal assistance for economically backward people is a _____
    a) Fundamental Right b) Fundamental duty
    c) Directive principles of state policy d) Special provision

17. Indian Constitution has
    a) 12 schedules b) 7 schedules c) 9 schedules d) 10 schedules

18. Which is not a Fundamental Right
    a) Right to freedom b) Right to Equality
    c) Right to Constitutional Remedies d) Right to property.

19. Three types of Justice referred in our preamble are.
    a) Social, Economic and Political b) Economic, International and Political
    c) Economic, Religious and Social d) Religious, Social and Political

20. The preamble of the Constitution of India has been amended so far
    a) Four times b) Thrice c) Twice d) Once

21. "Equal pay for Equal work" is
    a) Gandhian principle b) Sonolastic principle
    c) Liberal principle d) All of these

22. Article 22 of the Indian Constitution protects:
    a) Senior citizens b) Women
    c) Children d) Rights of arrested persons.

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23. This is not a Fundamental Duty
a) To develop scientific temper
b) To protect natural environment
c) Not to indulge in corrupt practice
d) To abide by the constitution

24. Which one of the following directive principles can be described as Gandhian in nature?
a) Providing equal pay for equal work for both men and women.
b) Worker's participation in management.
c) Organization of village panchayats as units of self-government.
d) Seperation of Judiciary from the executive.

25. Directive principles of state policies are
a) Non-Justiciable
b) Justiciable
c) Only some are Justiciable
d) None of these

26. The president gives his resignation to the
a) Chief Justice
b) Parliament
c) Vice President
d) Prime Minister

27. The governor of a state is appointed by the president on the advice of the
a) Prime Minister
b) Vice-President
c) Chief Minister
d) Chief Justice

28. Who appoints the Prime Minister of India?
a) Lok Sabha
b) President
c) Parliament
d) Citizens of India

29. Minimum age required to contest for office of the president
a) 23 yrs
b) 21 yrs
c) 35 yrs
d) 30 yrs

30. Who among the following, has the right to sanction the expenditure of public money in India?
a) Speaker
b) President
c) Prime Minister
d) Parliament

31. Who can initiate impeachment proceedings against the president of India?
a) Either the Houses of Parliament
b) Any Vidham Sabha
c) Rajya Sabha
d) Only Lok Sabha

32. The impeachment proceedings against the Vice-President can be initiated.
a) Only in Lok Sabha
b) In neither House of Parliament
c) In either House of Parliament
d) Only in Rajya Sabha

33. Who appoints the ambassadors to the other nations in India
a) Foreign Minister
b) President of India
c) Minister for External affairs
d) Prime Minister

34. The Vice President is elected by an electoral college consisting of members of
a) Both Houses of Parliament and State Legislative
b) Both the Houses of Parliament
c) Lok Sabha
d) Rajya Sabha

35. Which court is called as 'Custodian of Indian Constitution?
a) Supreme Court
b) High Court
c) Both 'a' and 'b'
d) All the Courts

36. Who administers the oath of office to the President of India before he enters upon the office?
a) Chief Justice of India
b) Speaker
c) Vice President
d) Prime Minister

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37. One feature distinguishing the Rajya Sabha from the Vidhan Parishad is
a) Power of Impeachment
b) Indirect Election
c) Nomination of Members
d) Tenure of Membership

38. Who acts on President of India when neither the President nor the Vice-President is available?
a) Seniormost Governor of a State
b) Chief Justice of India
c) Speaker of Lok Sabha
d) Auditor General of India

39. The retirement age of High Court Judges is:
a) 58 Years
b) 62 Years
c) 65 Years
d) 64 Years

40. What is the minimum age in years for becoming the MP at Lok Sabha and Rajya Sabha?
a) 18 and 25
b) 25 and 18
c) 25 and 30
d) 30 and 25

41. Who among the following holds office during the pleasure of President
a) Governor
b) Election Commissioner
c) Speaker of Lok Sabha
d) Prime Minister

42. A proclamation of emergency issued under Article 352 must be approached by the Parliament within:
a) 3 Months
b) 2 Months
c) 1 Month
d) 6 Weeks

43. The President's Rule in a state means that the state is ruled by
a) A caretaker Government
b) The Chief Minister nominated by President
c) The Governor of the state
d) The President directly

44. The control of the preparation of electoral rolls for parliament and legislature rests with the
a) President
b) Election Commission
c) Cabinet
d) Prime Minister

45. In India, Political parties are given recognition by
a) Election Commission
b) Speaker of Lok Sabha
c) President
d) Law Commission

46. Which article deals with Constitutional amendment procedures in India
a) A 370
b) A 368
c) A 350
d) A 320

47. Center can declare Constitutional emergency in a state under article
a) A 152
b) A 365
c) A 360
d) A356

48. The Lengthiest Constitutional amendment in India was
a) 44th amendment
b) 49th amendment
c) 42nd amendment
d) 92nd amendment

49. Election Commission conducts the election as per
a) People's Representative Act
b) Parliament act
c) Judicial act
d) All of these

50. In terms of election laws of India, electioneering ceases in a constituency at least ____ hours before the commencement of the polling.
a) 48
b) 36
c) 24
d) 12

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CBCS SCHEME

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Question Paper Version : A

First/Second Semester B.E./B.Tech./B.Design Degree Examination, June/July 2024

Innovation and Design Thinking

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Design thinking is _____
   a) A process that allows engineers and designers to create new and innovative solutions to business challenges.
   b) An iterative, non-linear process which focuses on a collaboration between designers and users
   c) a and b
   d) None of these

2. Select the correct order of the different stages of design thinking.
   i) Empathize ii) Define iii) Ideate iv) Prototype v) Test
   a) ii – iii – iv – v – i
   b) i – ii – iii – iv – v
   c) iii – iv – v – i – ii
   d) iv – v – i – ii – iii

3. Which of the following principles are not considered for design thinking?
   a) Embrace experimentation
   b) Human centric design
   c) Profit centric
   d) Pattern identification for problem solving

4. To empathize one has to
   a) Observe b) Engage c) Listen d) All of these

5. Which of the following are not tools of visualization?
   a) Maps b) Images c) Stories d) Videos

6. Journey mapping is also called _____ mapping
   a) Path b) Experience c) Conduct d) Feedback

7. Which of the following are not tools of design thinking?
   a) Co creation b) Proto typing c) Mind mapping d) Online mapping

8. Which design thinking phase is closely related to the creation of an minimum viable product (MVP)?
   a) Empathize b) Prototype c) Ideate d) Test

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9. Which one is the minimum viable product?

a)

b)

c) Both a and b

d) None of these

10. How can the theory and practice of design thinking work together?
a) Theory provides a set of rules to follow, while practice ensures the rules are applied effectively.
b) Theory and practice are two separate processes that do not overlap.
c) Theory provides a framework for creative problem solving, while practice develops the skills and knowledge to apply the framework effectively.
d) Theory and practice are interchangeable and can be used in any order.

11. What is real-time design interaction capture and analysis?
a) A process of capturing user feedback after the design process is complete.
b) A method of analyzing design interactions as they happen.
c) A technique for capturing user interactions with a product after it is released.
d) A way to analyze design interactions after they have occurred.

12. What types of interactions can be captured and analyzed in real-time design interaction capture and analysis?
a) User feed back and comments
b) User interface interactions
c) User demographic and preferences
d) User purchase behavior.

13. What is the importance of collaboration in design thinking?
a) It speeds up the design process
b) It eliminates the need for user research
c) It ensures all design decisions are final
d) It brings diverse perspectives and expertise to the design process.

14. What are some digital tools that can be enable efficient collaboration in design thinking?
a) E Mail
b) Social media platforms
c) Video conferencing and collaboration software
d) Design software

15. What is empathy in design?
a) Understanding the emotions and experiences of users
b) Creating products that appeal to users emotions
c) Limiting the number of user persons in the design process
d) Only designing products based on market research.

16. Why is empathy important in the design process?
a) It ensures all design decisions are final
b) It brings perspectives and expertise to the design process
c) It speeds up the design process
d) It results in product that meet users needs and desires.

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17. What is the benefit of empathy in design?
    a) It guarantees success in the market
    b) It speeds up the design process
    c) It ensures all design decisions are final
    d) It leads to more meaningful and impactful products.

18. What is distributed design collaboration?
    a) Collaboration between designers who are geographically separated.
    b) Collaboration between designers and machines.
    c) Collaboration between designers and machines
    d) Collaboration between designers from different industries.

19. What are some challenges of distributed design collaboration?
    a) Limited access to digital tools
    b) Technical difficulties and connectivity issues
    c) A lack of clear communication channels
    d) A limited pool of expertise and perspectives

20. What are some benefits of real-time interaction and analysis in design thinking?
    a) It allows for quick and agile decision making
    b) It limits the number of team members involved in the design process
    c) It eliminates the need for user research and testing
    d) It reduces the amount of feed back received from users.

21. How can real time interaction and analysis be integrated into the design process?
    a) By conducting user research and testing at the end of the design process only.
    b) By eliminating user feedback and relying solely on personal preferences.
    c) By analyzing market trends and sales data only.
    d) By incorporating user feedback throughout the entire design process.

22. What are some common tools used in the empathy phase of design thinking?
    a) Persona development and user interviews
    b) Brain storming and ideation sessions
    c) Sketching and prototyping
    d) User testing and feedback analysis.

23. What is the role of empathy in design thinking in IT?
    a) To understand the needs and challenges of IT users and stake holders.
    b) To create visually appealing IT products and services.
    c) To ensure compliance with industry standards and regulations.
    d) To increase profits for the IT organization.

24. What is the importance of prototyping in design thinking in IT?
    a) To test and refine IT products and services before launch.
    b) To show case IT capabilities to stake holders.
    c) To impress user with cutting edge technology.
    d) To ensure compliance with industry standards and regulations.

25. What is the goal of using design thinking in business process modeling?
    a) To create visually appealing process diagrams.
    b) To stream line business operations and increase efficiency.
    c) To reduce costs for the organization.
    d) To comply with industry regulations and standards.

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26. What is the importance of prototyping in design thinking in business process modeling?
    a) To test and refine process models before implementation.
    b) To show case the organizations capabilities to stakeholders.
    c) To impress users with cutting edge technology.
    d) To ensure compliance with industry standards and regulations.

27. What are some common challenges that can be addressed using design thinking in business process modeling?
    a) Inefficient processes that waste time and resources.
    b) Poor communication and collaboration between departments.
    c) Resistance to change from process users and stakeholders.
    d) All of these

28. What is the goal of using agile methodology in design thinking?
    a) To create aesthetically pleasing designs
    b) To increase efficiency and productivity in the design process
    c) To reduce costs for the organization
    d) To comply with Industry regulations and standards.

29. What is the importance of prototyping in agile design thinking?
    a) To quickly test and refine design ideas
    b) To showcase design capabilities to stoke holders
    c) To impress users with cutting edge technology
    d) To ensure compliance with industry standards and regulations

30. What are some common challenges that can be addressed using agile design thinking?
    a) Inefficient design processes that waste time and resources.
    b) Poor communication and collaboration between team members.
    c) Resistance to change from users and stakeholders.
    d) All of these

31. What is the goal of using agile technology in virtual collaboration environments for design thinking?
    a) To create aesthetically pleasing designs
    b) To increase efficiency and productivity in the design process
    c) To reduce costs for the organization
    d) To comply with industry regulations and standards

32. Why is scenario based prototyping important in innovation design thinking?
    a) It allows for faster development of prototypes
    b) It helps to identify potential usability issues before the product is released
    c) It reduces the cost of creating prototypes
    d) None of these

33. What is the first step in scenario based prototyping?
    a) Creating a detailed technical specification
    b) identifying potential users and use cases
    c) Building a physical mock up of the product
    d) None of these

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34. What are the key stages of the design thinking process?
a) Ideation, testing, and implementation
b) Empathy, define, ideate, prototype and test
c) Planning, execution and evaluation
d) None of these

35. What is storytelling in the context of design thinking?
a) If is the process of creating a narrative around a design solution.
b) It is the process of creating a story board to communicate design ideas.
c) It is the process of creating a visual representation of a design concept.
d) None of these

36. What are some common tools and techniques used in strategic foresight?
a) Scenario planning, trend analysis, and expert interviews
b) Prototyping, user testing and iterative design
c) Market research, customer feed back, and competitive analysis
d) None of these

37. What are some common tools and techniques used in sensemaking?
a) Empathy mapping, customer journey mapping and data visualization.
b) Prototyping, user testing and iterative design
c) Market research, customer feedback and competitive analysis
d) None of these

38. What is maintenance in the context of design thinking?
a) The process of repairing and upgrading existing design solutions.
b) The process of creating new design solutions from scratch.
c) The process of evaluating the effectiveness of existing design solutions.
d) None of these

39. What is value redefinition in the context of design thinking?
a) The process of identifying and redefining the value proposition of a design solution.
b) The process of creating a detailed technical specification for a design solution.
c) The process of evaluating the effectiveness of existing design solutions.
d) None of these

40. What is extreme competition in the context of design thinking?
a) The process of competing against other design teams to create the best solution.
b) The process of pushing design teams to their limits to create innovative solutions.
c) The process of collaborating with competitors to create a joint solution.
d) None of these

41. What is experience design in the context of design thinking?
a) The process of designing physical products and services.
b) The process of designing digital interfaces and interactions.
c) The process of designing holistic experiences for users across all touch points.
d) None of these

42. What is standardization in the context of design thinking?
a) The process of creating standardized design solutions.
b) The process of following a standard set of design principles.
c) The process of establishing standards for design processes and methodologies.
d) None of these

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43. What is humanization in the context of design thinking?
a) The process of marking designs more human centered and empathetic.
b) The process of making designs more technically advanced.
c) The process of making designs more aesthetically pleasing.
d) None of these

44. How can a creative culture be fastened in the design thinking process?
a) By encouraging risk-taking and experimentation
b) By establishing rigid design processes and guide lines
c) By prioritizing cost effectiveness over innovation
d) None of these

45. What are some common tools and techniques used in rapid prototyping?
a) Sketching, wire framing and paper prototyping
b) 3D printing, laser cutting and CNC machining
c) User research, market analysis and competitive analysis
d) None of these

46. How can a business model be designed using design thinking?
a) By identifying customer needs and pain points and designing solutions that address them.
b) By following a set of established business practices and industry standards.
c) By prioritizing cost effective over customer value.
d) None of these

47. Which phase is referred to as an experimental phase where continuous iterations can take place?
a) Define b) Empathise c) Prototype d) None of these

48. What is the term used to describe the process of narrowing down thoughts to reach the final solution?
a) Convergent thinking b) Divergent thinking
c) None of these d) Both a and b

49. Design thinking is typically used to provide a solution based approach to problem solving
a) True b) False

50. Can design thinking be applied in professions outside of design?
a) True b) False

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BMATS101

First Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Mathematics – I for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	With usual notations, prove that $\tan\phi = r\frac{d\theta}{dr}$.	6	L2	CO1
	b.	Show that the curves $r = a(1 + \sin\theta)$ and $r = b(1 - \sin\theta)$ intersect each other orthogonally.	7	L2	CO1
	c.	Find the radius of curvature at the point $\left(\frac{39}{2}, \frac{39}{2}\right)$ for the curve $x^3 + y^3 = 3axy$.	7	L3	CO1
		OR			
Q.2	a.	With usual notations prove that $\rho = \frac{\left[1 + y_1^2\right]^{3/2}}{y_2}$	8	L2	CO1
	b.	Find the pedal equation of the curve : $r^n = a^n \cos n\theta$.	7	L1	CO1
	c.	Using modern mathematical tool, write a program/code to plot the curve $r = 2\lvert\cos 2\theta\rvert$.	5	L1	CO5
		Module – 2			
Q.3	a.	Obtain the Maclaurin's expansion of $\log(1 + e^x)$ upto the term containing x^4.	6	L2	CO1
	b.	If $u = f[2x - 3y, 3y - 4z, 4z - 2x]$ then find the value of $\frac{1}{2}\frac{\partial u}{\partial x} + \frac{1}{3}\frac{\partial u}{\partial y} + \frac{1}{4}\frac{\partial u}{\partial z}$	7	L1	CO1
	c.	Find the maximum and minimum value of the function, $f(x, y) = x^3 + 3xy^2 - 15x^2 - 15y^2 + 72x$.	7	L1	CO1
		OR			
Q.4	a.	Evaluate $\lim_{x \to 0}\left(\frac{a^x + b^x + c^x + d^x}{4}\right)^{\frac{1}{x}}$	7	L2	CO1

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	b.	If $u = x^2 - y^2$, when $x = e^t \cos t$, $y = e^t \sin t$, show that $\frac{\partial u}{\partial t} = 2e^{2t}[\cos 2t - \sin 2t]$.	8	L2	CO1
	c.	Using modern mathematical tool write a program/code to show that $u_{xx} + u_{yy} = 0$, given $u = e^x[x\cos y - y\sin y]$.	5	L3	CO5
		Module – 3			
Q.5	a.	Solve: $\frac{dy}{dx} + \frac{y}{x} = y^2 x$	6	L3	CO2
	b.	Find the orthogonal trajectories of $\frac{x^2}{a^2+x} + \frac{y^2}{b^2+x} = 1$ where λ is a parameter.	7	L1	CO2
	c.	Solve : $x^2p^2 + xyp - 6y^2 = 0$.	7	L3	CO2
		OR			
Q.6	a.	Solve : $(y^4 + 2y)dx + (xy^3 + 2y^4 - 4x)dy = 0$.	6	L2	CO2
	b.	Solve the differential equation $L\frac{di}{dt} + Ri = 200\sin 300t$ when L = 0.05 and R = 100 and find the value of the current I at any time t, if initially there is no current in the circuit. What value does i approach after a long time.	7	L3	CO2
	c.	Find the general and singular solution of $(a^2 - x^2)p^2 + 2xyp + b^2 - y^2 = 0$	7	L2	CO2
		Module – 4			
Q.7	a.	(i) Find the remainder when 41^{75} is divided by 3, (ii) Find the last digit in 7^{289}.	6	L2	CO3
	b.	Find the solution of the linear congruence $18x \equiv 30 (\text{mod } 42)$.	7	L2	CO3
	c.	Using RSA algorithm find public key and private key with respect to p = 3, q = 11 and m = 31	7	L3	CO3
		OR			
Q.8	a.	Show that $8^{30} - 1$ is divisible by 31 using Fermet to little theorem.	6	L2	CO3
	b.	Solve the system of linear congruence's using CRT $x \equiv 2(\text{mod } 3)$, $x \equiv 3(\text{mod } 5)$, $x \equiv 2(\text{mod } 7)$.	7	L3	CO3
	c.	(i) Find the remainder when $349 \times 74 \times 36$ is divided by 3. (ii) Find the roots of $x^2 + 2x - 3 \equiv 0 (\text{mod } 5)$	7	L2	CO3
		Module – 5			
Q.9	a.	Find the rank of the matrix $\begin{bmatrix} -2 & -1 & -3 & -1 \\ 1 & 2 & 3 & 1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}$.	6	L2	CO4

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	b.	Test for consistency and solve $5x+3y+7z=4$, $3x+26y+2z=9$, $7x+2y+10z=5$	7	L3	CO4
	c.	Find the largest Eigen value and the corresponding Eigen vector, $A=\begin{bmatrix}6 & -2 & 2\\ -2 & 3 & -1\\ 2 & -1 & 3\end{bmatrix}$ with initial vector $[1\ 1\ 1\ 1\ 1]^T$ carry out 5 iterations.	7	L1	CO4
		OR			
Q.10	a.	Solve the system of equations by Gauss Seidal method $83x+11y-4z=95$, $7x+52y+13z=104$, $3x+8y+29z=71$. Carry out three iterations.	8	L4	CO3
	b.	Solve the system of equations by using Gauss-Jordan method: $x+2y+z=8$ $2x+3y+4z=20$, $4x+3y+2z=16$	7	L3	CO4
	c.	Using modern mathematical tool, write a program/code to find the largest eigen value of $A=\begin{bmatrix}1 & 1 & 3\\ 1 & 5 & 1\\ 3 & 1 & 1\end{bmatrix}$	5	L3	CO5

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Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Mathematics – II for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. VTU Formula Hand Book is permitted.
3. M : Marks , L: Bloom's level , C: Course outcomes.

		M	L	C
	Module – 1			
Q.1	**a.** Evaluate $\int_{-1}^{1}\int_{0}^{z}\int_{x-z}^{x+z}(x+y+z)\,dy\,dx\,dz$.	7	L2	CO1
	b. Evaluate $\int_{0}^{a}\int_{x}^{a}(x^2+y^2)\,dy\,dx$ by changing the order of integration.	7	L3	CO1
	c. Show that $\beta(m,n)=\frac{\Gamma(m)\Gamma(n)}{\Gamma(m+n)}$.	6	L2	CO1
	OR			
Q.2	**a.** Evaluate $\int_{0}^{1}\int_{0}^{\sqrt{1-y^2}}(x^2+y^2)\,dy\,dx$ by changing into polar co-ordinates.	7	L3	CO1
	b. Find the area between the parabolas $x^2=y$ and $y^2=x$ using double integration.	7	L3	CO1
	c. Using mathematical number's, write a code to find the area of an ellipse $\frac{x^2}{a^2}+\frac{x^2}{b^2}=1$ by double integration.	6	L3	CO5
	Module – 2			
Q.3	**a.** Find the directional derivative of $\phi=4xz^3-3x^2y^2z$ at (2, -1, 2) in the direction of the vector $2\hat{i}-3\hat{j}+6\hat{k}$.	7	L2	CO2
	b. If $\vec{F}=\nabla(x^3+y^3+z^3-3xyz)$ find div $\vec{F}$ and curl $\vec{F}$.	7	L2	CO2
	c. Prove that spherical co-ordinate system is orthogonal.	6	L3	CO2
	OR			
Q.4	**a.** Find the angle betwen the normals to the surface $xy=z^2$ at the points (4, 1, 2) and (3, 3, -3).	7	L2	CO2
	b. If $\vec{F}=(x+y+az)\hat{i}+(bx+2y-z)\hat{j}+(x+cy+2z)\hat{k}$, find a, b, c such that curl $\vec{F}=0$.	7	L2	CO2
	c. Using mathematical tool write a code to find the curl of $\vec{F}=x^3\hat{i}+y^3\hat{j}+z^3\hat{k}$.	6	L3	CO5
	Module – 3			
Q.5	**a.** Prove that the set $w=\left\{(x,y,z)/x-3y+4z=0\right\}$ is a subspace of $V_3(R)$.	7	L2	CO3

	b. Express the matrix $M=\begin{bmatrix}4 & 7\\ 7 & 9\end{bmatrix}$ as a linear combination of the matrices, $P=\begin{bmatrix}1 & 1\\ 1 & 1\end{bmatrix}, Q=\begin{bmatrix}1 & 2\\ 3 & 4\end{bmatrix}, R=\begin{bmatrix}1 & 1\\ 4 & 5\end{bmatrix}$	7	L2	CO3
	c. Find the basis and dimension of subspace spanned by the vectors, $\{(1,-2,3),(1,-3,4),(-1,1,-2)\}$ of $V_3(R)$.	6	L3	CO3
	OR			
Q.6	**a.** Find the matrix of linear transformation, $T: R^2 \to R^2$ defined by, $T(x,y)=(2x+3y, 4x-5y)$ with respect to the basis, $B_1=\{(1,2),(2,5)\}$ of R^2.	7	L2	CO3
	b. The transformation $G: R^3 \to R^3$ is defined as G(x,y,z)=(x+2y-z, y+z, x+2y-2z). Find the basis and dimension of Im(G).	7	L2	CO3
	c. If $f(t)=t+2$, $g(t)=3t-2$, $h(t)=t^2-2t-3$ and $\langle f,g\rangle=\int_0^1 f(t)g(t)dt$, find (i) $\langle f,g\rangle$ (ii) $\langle f,h\rangle$ (iii) $\|f\|$ and $\|g\|$	6	L3	CO3
	Module – 4			
Q.7	**a.** Find the real root of the equation $x^3-2x-5=0$, correct to three decimal places using Regula-Falsi method. Carry out three iteration.	7	L2	CO4
	b. Using Newton's forward interpolation formula find y at x = 5 from the following table:	7	L2	CO4
	c. Evaluate $\int_0^1 \frac{dx}{1+x^2}$ by using Simpson's $\frac{3}{8}^{th}$ rule taking six equal intervals.	6	L3	CO4
	OR			
Q.8	**a.** Find the real root of the equation, $xe^x-2=0$, correct to three decimal places using Newton-Raphson method. Carry out three iterations.	7	L2	CO4
	b. Using Lagrange's interpolation formula find f(4) given,	7	L2	CO4
	c. Evaluate $\int_0^1 \frac{x}{1+x^2}dx$ by trapezoidal rule considering six equal intervals.	6	L3	CO4
	Module – 5			
Q.9	**a.** Employ Taylor's series method to obtain approximate value of y at x = 0.1 for the differential equation, $\frac{dy}{dx}=2y+3e^x$, $y(0)=0$	7	L2	CO4
	b. Apply Runge-Kutta method of 4^{th} order to find an approximate value of y at x = 0.2, given that $\frac{dy}{dx}=\frac{y-x}{y+x}$, $y(0)=1$.	7	L2	CO4
	c. Apply Milne's method to find y(1.4) given $\frac{dy}{dx}=x^2+\frac{y}{2}$ and the following data : $y(1)=2$, $y(1.1)=2.2156$, $y(1.2)=2.4649$, $y(1.3)=2.7514$.	6	L3	CO5

x:	0	2	4	6	8	10
y:	0	4	56	204	496	980

x :	0	2	3	6
f(x) :	-4	2	14	158

	OR			
Q.10	**a.** Using modified Euler's method, find $y(0.1)$ given $\frac{dy}{dx} = x - y^2$, $y(0) = 1$. Carry out 3 iterations.	7	**L2**	**CO4**
	b. Using Runge-Kutta method of fourth order solve $\frac{dy}{dx} = \frac{1}{x+y}$, $y(0.4) = 1$ at $x = 0.5$	7	**L2**	**CO4**
	c. Using mathematical tool, write a code to solve the differential equation $\frac{dy}{dx} = x^2 + y^2$ with $y(0) = 0$, using Taylor's series method at $x = 0.1$.	6	**L3**	**CO5**

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BESCK204C/ BESCKC204

Second Semester B.E/B.Tech. Degree Supplementary Examination, June/July 2024

Introduction to Electronics and Communication

Time: 3 hrs. Max. Marks:100

Note: *1. Answer any FIVE full questions, choosing ONE full question from each module.*
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
1	a.	What is a regulated power supply? Draw the block diagram of DC power supply and explain the individual blocks with principal components.	8	L2	CO1
	b.	Draw the circuit diagram of voltage doublers and the working principle.	6	L2	CO1
	c.	Mention the advantages of negative feedback in amplifier circuits. With relevant equations and diagram, explain the concept of negative feedback.	6	L2	CO1
		OR			
2	a.	With a neat circuit diagram and waveform explain the working of a full wave bridge rectifier.	8	L2	CO1
	b.	What is an amplifier? Explain its types.	5	L2	CO1
	c.	What is voltage regulator? Draw the circuit diagram of voltage regulator and explain the operation.	7	L2	CO1
		Module – 2			
3	a.	Draw the circuit diagram and input and output waveform of the following operational amplifier circuits. i) Differentiator ii) Integrator iii) Voltage follower.	9	L2	CO2
	b.	Write a note on ideal characteristics of an op-amp.	6	L2	CO2
	c.	What is oscillator? Mention the condition of oscillators.	5	L1	CO2
		OR			
4	a.	With circuit diagram, explain the operation of a Wien bridge oscillator.	8	L2	CO2
	b.	Explain the single state astable oscillator with circuit diagram.	8	L1	CO2
	c.	Define the following operational amplifiers parameters and write their typical values : i) Slew rate ii) Input offset voltage.	4	L1	CO2
		Module – 3			
5	a.	Implement full adder using two half address and one or gate. Reduce the equations for sum and carry.	8	L3	CO3
	b.	Convent the following : i) $(110.1101)_2 = (?)_{10}$ ii) $(847.951)_{10} = (?)_8$ iii) $(CAD.BF)_{16} = (?)_{10}$.	6	L2	CO3
	c.	Write the step-by-step procedure to design a combinational circuit.	6	L1	CO3

		OR			
6	a.	State and prove De Morgan's theorem with its truth table for 2 variables.	**8**	**L1**	**CO3**
	b.	i) Subtract using (r – 1)'s complement method : a) $4456_{10} - 34234_{(10)}$ ii) Subtract using r's complement method a) $1010100_{(2)} - 1000100_{(2)}$.	**6**	**L3**	**CO3**
	c.	Using basic Boolean theorems, prove, i) $(x + y)(x + z) = x + yz$ ii) $xy + xz + y\bar{z} = xz + y\bar{z}$.	**6**	**L3**	**CO3**
		Module – 4			
7	a.	What is an embedded system? Differentiate between embedded system and general purpose computing system.	**8**	**L2**	**CO4**
	b.	Discuss the typical embedded system elements.	**7**	**L2**	**CO4**
	c.	Write a note on classification of embedded systems.	**5**	**L1**	**CO4**
		OR			
8	a.	List the comparison between microprocessor and microcontroller.	**6**	**L1**	**CO4**
	b.	Write short notes on 7 – segment LED display.	**7**	**L2**	**CO4**
	c.	Write a note on transducers. Explain one type of sensor and actuator with its operation.	**7**	**L2**	**CO4**
		Module – 5			
9	a.	List out the advantages of digital communication over analog communication.	**5**	**L1**	**CO5**
	b.	Brief about modern communication system with its block diagram.	**7**	**L2**	**CO5**
	c.	Explain with a neat diagram, the concept of radio wave propagation and its different types.	**8**	**L2**	**CO5**
		OR			
10	a.	Describe the classification of RF (Radio Frequency) spectrum with applications in communication systems.	**7**	**L2**	**CO5**
	b.	Describe about ratio signal transmission and multiple access techniques.	**7**	**L2**	**CO5**
	c.	Explain the following with the help of waveforms : i) ASK ii) FSK iii) BPSK.	**6**	**L2**	**CO5**

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BETCK205H/BETCKH205

Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Introduction to Internet of Things (IoT)

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Define IoT. Explain the characteristics of IoT.	05	L2	CO1
	b.	Differentiate between point to point and point to multipoint connection type.	05	L2	CO1
	c.	Explain OSI model with neat block diagram.	10	L2	CO1
		OR			
Q.2	a.	With a neat diagram, explain the interdependency technology for IoT planes.	10	L2	CO1
	b.	Differentiate between IoT and M2M.	05	L1	CO1
	c.	Explain various networking components of IoT.	05	L2	CO1
		Module – 2			
Q.3	a.	Outline the basic differences between transducers sensors and actuators.	05	L2	CO2
	b.	List and explain characteristics of sensor.	05	L1	CO2
	c.	List and explain the Actuators.	10	L2	CO2
		OR			
Q.4	a.	Explain sensorial deviation's with respect to analog and digital sensors.	10	L2	CO2
	b.	Differentiate basic differences between sensors and actuators.	05	L1	CO2
	c.	Outline a simple actuation mechanism.	05	L1	CO2
		Module – 3			
Q.5	a.	Elucidate the different data formats found in IoT network.	10	L2	CO3
	b.	How collaborative processing is different from remote processing?	10	L2	CO3
		OR			
Q.6	a.	Explain IoT device design and selection considerations.	10	L2	CO3
	b.	What is process off-loading? Infer the different data off-loading method.	10	L2	CO3
		Module – 4			
Q.7	a.	Define cloud computing. Describe the advantages of cloud computing.	10	L2	CO4
	b.	With a neat diagram, explain architecture of sensor cloud platform.	10	L2	CO4
		OR			
Q.8	a.	Define Service Level Agreement (SLA). Explain its importance and metrics used while defining SLA.	10	L2	CO4
	b.	With a neat diagram, explain the components of an agriculture IoT.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain the architecture of Healthcare IoT.	10	L2	CO5
	b.	List and brief the advantages of vehicular IoT.	10	L1	CO5
		OR			
Q.10	a.	List the applications of IoT in transportation.	10	L1	CO5
	b.	Define machine learning. List out the advantages of machine learning with diagram.	10	L2	CO5

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BPWSK106/206

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Professional Writing Skills in English

Time: 1 hrs.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Identify the sentence with a parts of speech error:
   a) She plays the piano very well
   b) They are listening to music
   c) He are playing soccer
   d) We is going to the movies.

2. Which sentence contains a parts of speech error?
   a) He are a good student.
   b) She sings beautifully.
   c) We will eat pizza for dinner.
   d) They are playing soccer outside.

3. In which sentence is the error in parts of speech?
   a) She is reading an interesting book.
   b) I can swimming very well.
   c) They are watching a movie.
   d) He plays the guitar

4. What is the grammatical term for a word that connects words, phrases, or clauses?
   a) Conjunction b) Preposition c) Adverb d) Interjection

5. In the sentence, "I saw him running down the street, "what is the function of the word "running"?
   a) Adjective b) Adverb c) Gerund d) Infinitive

6. What is the function of a participle in a sentence?
   a) To modify a noun or pronoun
   b) To express an action
   c) To function as the subject of a verb
   d) To function as the object of a verb

7. In the sentence, "The book on the table is mine," what is the function of the phrase "on the table"?
   a) Adjective
   b) Adverb
   c) Prepositional phrase
   d) Gerund phrase

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8. Which sentence has a grammatical error?
   a) He enjoy playing basketball.
   b) They is going to the beach.
   c) She have finished her homework.
   d) We am going to the park.

9. What is the grammatical mistake in the sentence: "The dog laying in the sun"?
   a) Verb tense
   b) Subject-verb agreement
   c) Verb form
   d) Word choice

10. What is the grammatical mistake in the sentence: "The car is blue, and the truck is red color"?
   a) Run-on sentence
   b) Comma splice
   c) Redundancy
   d) Fragment sentence

11. Which sentence contains a grammatical error?
   a) The cat is sleeping on the couch.
   b) She are a doctor.
   c) They is going to the park.
   d) I like to sing.

12. What is the grammatical error in the sentence: "He don't have any money"?
   a) Subject-verb agreement
   b) Pronoun usage
   c) Tense consistency
   d) Sentence structure

13. Which of the following sentences has a grammatical error?
   a) She sings beautifully.
   b) We am going to the park.
   c) They are watching a movie.
   d) He plays basketball every weekend.

14. Which sentence demonstrates correct subject-verb agreement?
   a) The dogs barks loudly in the park.
   b) The dog bark loudly in the park.
   c) The dogs bark loudly in the park.
   d) The dog barks loudly in the park.

15. Which option demonstrates correct subject-verb agreement?
   a) The team are playing well this season.
   b) The team is playing well this season.
   c) The team were playing well this season.
   d) The team am playing well this season.

16. Which of the following sentences is in the present perfect tense?
   a) She will go to the store.
   b) She is going to the store.
   c) She went to the store.
   d) She has gone to the store.

17. What is the future tense of the verb "to swim"?
   a) Swim
   b) Swam
   c) Swimming
   d) Will swim

18. Which tense is used to describe actions that are ongoing or happening at the moment?
   a) Present simple
   b) Past simple
   c) Present continuous
   d) Past continuous

19. What is the past tense of the verb "to eat"?
   a) Eating
   b) Eaten
   c) Ate
   d) Eat

20. In the sentence, "I have lived here for ten years," which tense is used for the verb "have lived"?
   a) Present simple
   b) Present perfect
   c) Past simple
   d) Past perfect

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21. What is the future tense of the verb "to run"?
a) Runs b) Running c) Ran d) Will run

22. Which of the following sentences is in the past continuous tense?
a) She has been studying all day. b) She studied for the exam last night.
c) She was studying when the phone rang. d) She will study tomorrow.

23. Which of the following refers to words that have similar meanings?
a) Synonyms b) Antonyms c) Homonyms d) Homophones

24. What term describes words that are spelled the same but have different meanings and sometimes different pronunciations?
a) Synonyms b) Antonyms c) Homonyms d) Homophones

25. Complete the analogy: Cat is to kitten as dog is to ____.
a) Cub b) Puppy c) Foal d) Chick

26. Choose the correct usage: "Yours" versus "You're".
a) Your going to love the party. b) You're going to love the party.
c) Youre going to love the party. d) You are going to love the party.

27. Choose the correct usage: "Its" versus "It's".
a) Its a beautiful day outside. b) It's a beautiful day outside.
c) Its raining heavily d) It is raining heavily.

28. Choose the correct collocation:
a) Make an appointment. b) Do an appointment.
c) Take an appointment. d) Give an appointment.

29. Identify the correct collocation:
a) Take a decision b) Make a decision
c) Do a decision d) Give a decision

30. Which contraction is correct for "they have"?
a) they've b) they're c) they'd d) they'll

31. Choose the correct contraction for "we will":
a) we're b) we've c) we'd d) we'll

32. What is the contraction of "cannot"?
a) can't b) couldn't c) can've d) can't've

33. Rearrange the words to form a grammatically correct sentence" "Yesterday, went, to, I, store, the."
a) Yesterday I went to store the. b) Went I to the store yesterday.
c) Yesterday I went to the store. d) I went to the store yesterday.

34. Rearrange the words to form a coherent sentence: "She books, enjoys, reading, many, by, written, different, authors."
a) She enjoys reading many books by different authors written.
b) She enjoys readings by many books written different authors.
c) She enjoys reading many books written by different authors.
d) She by different enjoys readings many books written authors.

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45. Where is the error in the sentence: "Their going to the beach tomorrow."
a) Their b) going c) to the beach d) tomorrow

46. Identify the error in the sentence: "The book is laying on the table."
a) The b) book c) is laying d) on the table

47. Which option improves the sentence: "He plays good football."
a) He plays well football. b) He plays football good.
c) He plays football well. d) He plays football goodly.

48. Choose the improved version of the sentence" "The weather is too much hot today."
a) The weather is very hot today. b) The weather is too hot today.
c) The weather is much hot today. d) The weather is hot too much today.

49. Which option corrects the sentence: "I am not feeling good today."
a) I am not feeling well today. b) I am not feeling goodly today.
c) I am not feeling better today. d) I am not feeling good today.

50. Choose the corrected version of the sentence: "He goes to gym regular."
a) He goes to gym regularly. b) He goes to the gym regular.
c) He goes to the gym regularly. d) He goes to gym regulars.

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35. Rearrange the words to form a grammatically correct sentence: "In, I, morning, the go, always, for, a, run."
a) Always in the morning go I for a run.
b) In the morning always I go for a run.
c) I always go for a run in the morning.
d) In the always morning I go for a run.

36. Rearrange the words to form a coherent sentence: "Hiking, in, we, enjoyed, the, mountains, beautiful, the."
a) We enjoyed hiking in the mountains the beautiful.
b) In the mountains we enjoyed hiking the beautiful.
c) We enjoyed the beautiful mountains in the hiking.
d) The beautiful mountains in the hiking we enjoyed.

37. Identify the error in the sentence: "The dog wagged it's tail excitedly."
a) The b) dog c) wagged d) it's

38. What is the active voice form of the sentence: "The cake was baked by Sarah"?
a) Sarah has baked the cake. b) Sarah had baked the cake.
c) Sarah bakes the cake. d) Sarah will bake the cake.

39. Which option correctly transforms the sentence into passive voice: "The teacher teaches the students"?
a) The teacher is teaching by the students.
b) The students are being taught by the teacher.
c) The teacher was teaching the students.
d) The students were taught by the teacher.

40. What is the reported speech form of the direct speech: "He said, 'I am leaving for London tonight'"?
a) He said that he leaves for London tonight.
b) He said that he left for London tonight.
c) He says that he leaves for London tonight.
d) He says that he left for London tonight.

41. Choose the correct transformation of the sentence into reported speech: "She said, 'I have already finished my homework."
a) She said that she already finished her homework.
b) She says that she has already finished her homework.
c) She said that she has already finished her homework.
d) She says that she had already finished her homework.

42. Identify the error in the sentence: "He don't have enough money to buy a car."
a) He b) don't c) have d) enough

43. Which part of the sentence contains the error: "The student's scored high marks in the exam."
a) The b) student's c) scored high marks d) in the exam

44. Find the error in the sentence: "She sings beautiful."
a) She b) sings c) beautiful d) no error

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BPHYS102/202

First/Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Applied Physics for CSE Stream

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	a.	Obtain the expression for energy density using Einstein's coefficients of absorption and emission.	08	L2	CO1
	b.	Define angle of acceptance. Explain types of optical fibres with neat ray diagram and refractive index profile.	07	L2	CO1
	c.	Find the ratio of population of the two states in a He-Ne laser that produce light of wavelength 6328 A° at 27°C.	05	L3	CO1
		OR			
Q.2	a.	Derive an expression for numerical aperture of an optical fibre in terms of fraction of RI.	08	L2	CO1
	b.	What is active medium? Explain construction and working of semiconductor laser.	07	L2	CO1
	c.	For a 30 cm long fiber attenuation 0.8 dB/km, find the output power if a 200 μW power is launched?	05	L3	CO1
		Module – 2			
Q.3	a.	Define graph velocity, phase velocity, wave function and probability density.	08	L2	CO2
	b.	Derive time-independent Schrödinger wave equation.	07	L2	CO2
	c.	Which has shorter wavelength, a 10 eV photon or a 10 eV electron? Explain.	05	L2	CO2
		OR			
Q.4	a.	State and explain Heisenberg's uncertainty principle. Explain principle of complimentarity.	07	L2	CO2
	b.	Derive the wave function of a particle inside infinite potential well of width 'a' using normalization condition.	08	L2	CO2
	c.	Compute the energy of the lowest three levels for an electron in a square well of width 3 A°.	05	L3	CO2
		Module – 3			
Q.5	a.	What is Block Sphere? Represent | 0 > and |1 > on the Bloch sphere.	08	L2	CO1
	b.	Explain probability, normalization and quantum superposition.	07	L2	CO1
	c.	Using two X-gates in series, show that two not gates in series are equivalent to a quantum wire.	05	L2	CO1
		OR			
Q.6	a.	Discuss two qubit quantum NOT gate or controlled NOT gate with four different input states.	08	L2	CO3
	b.	State Moore's law. Show that S gate can be formed by connecting two T gates in series.	07	L3	CO3
	c.	Find the inner product basis of states | 1 > and | 0 >, and draw conclusions on the result.	05	L3	CO3

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		Module – 4			
Q.7	**a.**	State Mathiessen's rule. Discuss variation of Fermi factor with temperature and energy.	**08**	**L2**	**CO4**
	b.	Define critical field. Write a note on high temperature super conductors.	**07**	**L1**	**CO4**
	c.	In a solid, consider the energy level lying 0.01 eV below the fermilevel. What is the probability of this level not being occupied by an electron?	**05**	**L3**	**CO4**
		OR			
Q.8	**a.**	Define super conductors. Give brief account on BCS theory of super conductors.	**08**	**L2**	**CO4**
	b.	What is density of states? Explain failures of classical free electron theory.	**07**	**L2**	**CO4**
	c.	Find the transition temperature of a metal whose critical magnetic field is 5×10^3 A/m at 6 K and 2×10^4 A/m at 0 K.	**05**	**L3**	**CO4**
		Module – 5			
Q.9	**a.**	What are frames and frames per seconds? Explain how the odd rule can be applied to place the object in specific frames.	**08**	**L2**	**CO5**
	b.	Explain Monte-Carlo method applied to approximating the value of x.	**07**	**L2**	**CO5**
	c.	While animating a speeding up car the total distance travelled over 6 frames is 25 m, calculate the basic distance.	**05**	**L2**	**CO5**
		OR			
Q.10	**a.**	Define jump magnification. Explain how to calculate jump timing.	**07**	**L2**	**CO5**
	b.	Explain Poisson and normal distribution with their probability functions.	**08**	**L2**	**CO5**
	c.	The number of particles emitted per second by a random radioactive source has a Poison distribution with $\alpha = 4$. Calculate the probability of $P(x = 0)$, $P(x = 1)$ and $P(x = 2)$.	**05**	**L3**	**CO5**

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BPOPS103/203

First/Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Principles of Programming Using C

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	**a.**	Discuss the structure of 'C' program with an example.	**8**	**L2**	**CO1**
	b.	What are Variables? Write the rules to declare a variable.	**6**	**L2**	**CO2**
	c.	What are escape sequences? Mention the escape sequences of 'C' language with their meaning.	**6**	**L2**	**CO2**
		OR			
Q.2	**a.**	Explain any two output devices in detail.	**6**	**L2**	**CO1**
	b.	With an example, explain Input – Output statements in 'C'.	**6**	**L2**	**CO2**
	c.	Discuss the classification of Computers.	**8**	**L2**	**CO1**
		Module – 2			
Q.3	**a.**	List all decision control statements in 'C'. Explain else – if ladder and nested if with its syntax and example.	**8**	**L2**	**CO2**
	b.	Write a 'C' program to simulate a calculator using switch statement.	**6**	**L3**	**CO2**
	c.	Explain break and continue statement with example.	**6**	**L3**	**CO2**
		OR			
Q.4	**a.**	Explain the for Loop with its syntax. Write a 'C' program to find whether a given number is prime or not.	**8**	**L3**	**CO2**
	b.	Differentiate while and do – while loops with example.	**6**	**L3**	**CO2**
	c.	What are nested loops? Give example. Write a 'C' program to display the pattern shown below. 1 2 2 3 3 3 4 4 4 4 5 5 5 5 5	**6**	**L3**	**CO2**
		Module – 3			
Q.5	**a.**	Define Function. Write the syntax of a function. Explain the categories of function with examples.	**10**	**L2**	**CO2**

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	b.	Briefly explain the storage classes supported by 'C' language.	10	L2	CO2
		OR			
Q.6	a.	Differentiate pass by value end pass by address parameter passing techniques.	5	L3	CO3
	b.	How 2 – dimensional arrays are declared and initialized? Write a 'C' program to find the transpose of a matrix.	7	L4	CO3
	c.	Define Recursion. Mention the properties of Recursion function. Write a 'C' program to find GCD of 2 numbers using recursive function.	8	L4	CO3
		Module – 4			
Q.7	a.	What are Strings? Explain the 'C' function used to read and write characters.	6	L2	CO3
	b.	Write a program to find length of given string without using built in function.	6	L3	CO2
	c.	What is a Pointer? How pointer are declared and initialized? Mention the various operations that are carried out on pointers.	8	L4	CO4
		OR			
Q.8	a.	Write a program to copy and concatenate from one string to another.	8	L3	CO5
	b.	Explain any 6 string manipulation functions.	6	L3	CO4
	c.	Write a 'C' program to find sum, mean, standard deviation of all elements in an array using pointers.	6	L5	CO5
		Module – 5			
Q.9	a.	What is Union? Give its syntax. Differentiate unions and structures.	8	L2	CO4
	b.	Explain with an example array of structures and arrays within structure.	6	L2	CO4
	c.	Write a note on Structures and Functions.	6	L3	CO4
		OR			
Q.10	a.	What is a File? Explain different modes of File with example.	8	L2	CO5
	b.	Write a note on Enumerated Data type.	6	L2	CO4
	c.	Write a 'C' program to copy the contents from one file to another.	6	L4	CO5

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BESCK204D/BESCKD204

Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Introduction to Mechanical Engineering

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

			M	L	C
		Module – 1			
Q.1	a.	Discuss the Role of Mechanical Engineer in society.	5	L2	CO1
	b.	Explain the trends in mechanical engineering industry.	7	L2	CO1
	c.	Enumerate the importance of mechanical Engineer in Manufacturing and Automobile industry.	8	L2	CO1
		OR			
Q.2	a.	Briefly explain the causes for Global warming.	5	L2	CO1
	b.	Sketch and explain Wind mill working.	7	L2	CO1
	c.	Explain the construction of Hydel power plant with a neat sketch.	8	L2	CO1
		Module – 2			
Q.3	a.	Explain the knurling operation.	5	L2	CO2
	b.	Explain the Drilling and Boring operation with suitable sketches.	7	L2	CO2
	c.	Briefly explain the following milling operation : (i) Plane milling (ii) Slot milling	8	L2	CO2
		OR			
Q.4	a.	Write the advantages and applications of CNC.	5	L1	CO2
	b.	Explain briefly the CNC configuration with a block diagram.	7	L2	CO2
	c.	Discuss the steps in 3D printing.	8	L2	CO2
		Module – 3			
Q.5	a.	Sketch and explain the IC Engine components.	4	L2	CO3
	b.	Briefly explain 4-stroke petrol engine.	8	L2	CO3
	c.	Explain the 4-stroke diesel engine with appropriate sketches.	8	L2	CO3
		OR			
Q.6	a.	List the advantages, disadvantages and applications of EV.	6	L1	CO3
	b.	Explain briefly the components of EV with a sketch.	7	L2	CO3
	c.	Discuss the types of EV.	7	L2	CO3
		Module – 4			
Q.7	a.	Discuss the characteristics and applications of Aluminium alloy.	6	L1	CO4
	b.	Explain the following Engineering materials: (i) Ceramics (ii) Glass	7	L2	CO4
	c.	Write short note on : (i) Polymers (ii) SNA	7	L2	CO4

		OR			
Q.8	**a.**	Explain the types of flames in Gas Welding process.	**6**	**L2**	**CO4**
	b.	Differentiate between soldering, brazing and welding.	**7**	**L2**	**CO4**
	c.	With a neat sketch, explain Arc welding process.	**7**	**L2**	**CO4**
		Module – 5			
Q.9	**a.**	Differentiate open loop and closed loop control system.	**6**	**L2**	**CO5**
	b.	Explain the types of automation.	**7**	**L2**	**CO5**
	c.	Explain the types of Robt configurations (any 2) with sketches.	**7**	**L2**	**CO5**
		OR			
Q.10	**a.**	Explain the characteristics of IOT.	**6**	**L2**	**CO5**
	b.	Discuss with a block diagram, the physical design of IOT.	**7**	**L2**	**CO5**
	c.	Explain the types of communication models.	**7**	**L2**	**CO5**

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BPLCK205B/BPLCKB205

Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Introduction to Python Programming

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain elif, for, while statement in python with example for each.	06	L2	CO1
	b.	List and explain math operators used in python with example.	06	L2	CO1
	c.	Develop a program to read the name and year of birth of a person. Print whether person is senior citizen or not.	08	L3	CO1
		OR			
Q.2	a.	Explain local and global scope with example.	06	L2	CO1
	b.	With an example, explain the following built in function : (i) print( ) (ii) input( ) (iii) len( )	06	L2	CO1
	c.	Develop a program to generate Fibonacci number of length (N). Read N from the console.	08	L3	CO1
		Module – 2			
Q.3	a.	Explain the following list methods with example : (i) append( ) (ii) insert( ) (iii) sort( )	08	L2	CO2
	b.	Differentiate List and dictionaries.	04	L1	CO2
	c.	Develop a program using dictionary to print Ten most frequently appearing word in a text file.	08	L3	CO2
		OR			
Q.4	a.	Explain the following method with example: (i) key( ) (ii) values( ) (iii) items( ) in dictionary	08	L2	CO2
	b.	Show that List are Mutable.	04	L1	CO2
	c.	Develop a program to compute Mean, Variance, Standard deviation with message.	08	L3	CO2
		Module – 3			
Q.5	a.	Explain the following string method with example: (i) isalpha( ) (ii) isalnum( ) (iii) isdecimal( ) (iv) isspace( )	08	L1	CO3

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	b.	Differentiate between absolute and relative path in specify file path.	04	L2	CO3
	c.	Write a program to accept string and display total number of alphabet.	08	L3	CO3
		OR			
Q.6	a.	Explain the following method with example: (i) upper( ) (ii) lower( ) (iii) is_upper( ) (iv) is_lower( )	08	L2	CO3
	b.	Explain how to save variable with Shelve module.	04	L2	CO3
	c.	Develop a program to sort the content of a text file and write the sorted content into separate file.	08	L2	CO3
		Module – 4			
Q.7	a.	How do you copy files and folders using Shutil module? Explain in detail.	10	L2	CO3
	b.	With suitable code, explain Backup a folder into a Zip files, clearly mention steps in detail.	10	L3	CO3
		OR			
Q.8	a.	What are assertions? Write the content of an assert statement. Explain then with example.	10	L2	CO3
	b.	Explain logging module with example how files and folder can be permanently deleted.	10	L2	CO3
		Module – 5			
Q.9	a.	What is a class? How to define class in python? How to initiate a class and how the class members are accessed?	10	L2	CO4
	b.	What is polymorphism? Demonstrate polymorphism with function to find histogram to count the number of times each letter appears in a word and in sentences.	10	L3	CO4
		OR			
Q.10	a.	Discuss operator overloading. Mention any five operators with respective special function to be overloaded in python.	10	L2	CO4
	b.	Define pure function. Illustrate with an example.	10	L3	CO4

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Question Paper Version : A

First/Second Semester B.E./B.Tech. Degree Supplementary Examination, June/July 2024

Indian Constitution

Time: 1 hr.] [Max. Marks: 50

INSTRUCTIONS TO THE CANDIDATES

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

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1. Ultimate source of authority under the Constitution lies in ____
   a) Parliament b) People of India
   c) Judiciary d) Executive

2. The Constitution of India was adopted by the Constituent Assembly in the year or date __
   a) 26 - 01-1950 b) 29 – 11 - 1949 c) 15 – 08 - 1947 d) 09 – 09 - 1946

3. The basic objectives of Indian Constitution are found in ____
   a) Fundamental Rights b) Directive Principles of State Policy
   c) Preamble d) Fundamental Duties

4. Who was the Permanent Chairman of the Constituent Assembly?
   a) Mahatma Gandhi b) Jawaharlal Nehru
   c) Dr. B.R. Ambedkar d) Dr. Rajendra Prasad

5. Who was the leader of the Extremist group to fight against British Rule?
   a) Sardar Vallabai Patel b) Mahatma Gandhi
   c) Subhash Chandra Bose d) Dr. Rajendra Prasad

6. Government of India set of 1919 introduced a system of ____
   a) Federal b) Diarchy c) Democracy d) Anarchy

7. The Cabinet mission came to India in the year _____
   a) 1935 b) 1944 c) 1945 d) 1946

8. How much time was taken by drafting Committee to draft the Indian Constitution?
   a) 2 years 11 months 18 days b) 3 years 11 months 8 days
   c) 2 years 8 months 11 days d) 1 year 11 months 18 days

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9. How many members were appointed for the drafting Committee of the Constitution excluding Chairman?
   a) 5 b) 6 c) 8 d) 7

10. The term 'Unitary' means :
   a) Concentration of Powers b) Division of Powers
   c) Absolute Power d) All of these

11. Which is the key to open the minds of the makers of the Constitution?
   a) Fundamental Rights b) Directive Principles
   c) Fundamental Duties d) Preamble

12. "Rights are not only privileges but they are the weapons in the hands of people to control Government", who gave this statement?
   a) Dr. Rajendra Prasad b) Dr. B.N. Rao
   c) Dr. Ambedkar d) S.V. Patel

13. The practice of untouchability is prohibited under ___
   a) Article 14 b) Article 15 c) Article 16 d) Article 17

14. Right to Life under Art. 21 does not include
   a) Right to Education b) Right to Dignity
   c) Right to Suicide d) Right to Livelihood

15. Reasonable restrictions can be imposed by the State under :
   a) Art. 19 (1) (a) to (g) b) Art. 19 (2) to (6)
   c) Art. 20 (a) to (c) d) Art. 21

16. Fundamental Rights under Part – III can be protected by
   a) Supreme Court b) Parliament
   c) Union Chief Executive d) Attorney – General of India

17. 'Writ of Mandamers' cannot be issued against :
   a) State Government b) President of India
   c) Prime Minister of India d) Public Servant

18. An arrested person is to be produced before the Magistrate or Court within :
   a) One month b) 3 month c) 24 hours d) 48 hours

19. No Person is to be punished twice for the same offence "is The Fundamental Right available under Article :
   a) 19 b) 20 c) 21 d) 22

20. What is the meaning of "Habeas Corpus"?
   a) You may have the body b) To do a duty
   c) On what Authority? d) None of these

21. "Right to Press" (news media) is included under :
   a) Right to Freedom of Speech and expression
   b) Right to Assembly
   c) Right to trade d) Right to move

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22. Right to Minorities are guaranteed under Articles :
a) 14 to 16 b) 21 to 24 c) Arts. 29 & 30 d) 17 and 18

23. The Directive principles of State Policy are :
a) Enforceable by Court b) Not enforceable by Court
c) Only a direction to State Government d) None of these

24. Which provision of the Constitution recognizes International Law?
a) Art. 39 b) Art. 48 c) Art. 51 d) Art. 44

25. DPSP (Part – IV) directs the State to secure to all workers :
a) Minimum wages b) Living wages c) Standard wages d) Fair wages

26. Who is having the duty to send the children to School?
a) State b) Parent / Guardian c) Zilla Panchayat d) None of these

27. Which Article enumerates Fundamental duties?
a) Art. 41 b) Art. 51 c) 51 - A d) Art. 52

28. How many members are nominated to Rajya Sabha by the President?
a) Two b) One c) Twelve d) Eight

29. Who can certify the money bill immediately after introducing in Lok Sabha?
a) Prime Minister b) Speaker c) Finance Minister d) Any one

30. Who can dissolve Lok Sabha?
a) Prime Minister b) Speaker c) President d) Vice - President

31. Who can pass an Ordinance in the State Government?
a) Governor b) Chief Minister c) Law Minister d) Speaker

32. Who can appoint the Chief Justice of Supreme Court?
a) Prime Minister b) Law Minister c) Vice - President d) President

33. What is the minimum age to become the member of Legislative Assembly?
a) 21 years b) 25 years c) 30 years d) 35 years

34. Special provisions are given for
a) Backward classes b) Women & Children
c) Senior Citizens d) Both 'a' and 'b'

35. How many kinds of emergencies are incorporated in the Constitution?
a) 5 Types b) 4 Types c) 3 Types d) 2 Types

36. Who is to act on the advice of the Council of Ministers?
a) Prime Minister b) President c) Vice - President d) Governor

37. The President cannot issue the proclamation of emergency after 1978 for the reason :
a) Internal disturbance b) Terrorism inside India
c) Armed rebellion d) Covid like Epidemic diseases

38. Who can recommend for the declaration of State emergency?
a) Chief Minister b) Governor c) State Cabinet d) None of these

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39. Which are the Articles not to be suspended during National Emergency?
a) Arts. 14 to 16 b) Arts. 19 and 22 c) Arts. 20 and 21 d) Arts. 29 to 30

40. Who appoints the Chief Election Commissioner of India?
a) President b) Prime Minister
c) Chief Justice of India d) Cabinet

41. How many members are there in the Election Commission at present?
a) Seven b) Five c) Four d) Three

42. There is no provision in the Indian Constitution for the impeachment of :
a) President b) Chief Justice of Supreme Court
c) Chief Election Commissioner d) Governor

43. Election Commission does not conduct Election to
a) President b) Vice - President c) Speaker d) MPS

44. Who can amend the provisions of the Constitution?
a) Parliament b) Cabinet c) President d) State Legislative

45. The Amendment procedure laid down in the Indian Constitution under the Article :
a) Art. 324 b) Art. 360 c) Art. 368 d) Art. 378

46. Which one of the following Amendments decreased the age of voting from 21 years to 18 years.
a) 44th Amendment b) 61st Amendment c) 62nd Amendment d) 72nd Amendment

47. By which Amendment the Fundamental Duties of Citizens was included in the Constitution of India?
a) 44th b) 38th c) 41st d) 42nd

48. Who has been made responsible for free and fair Elections in the Country?
a) President b) Chief Justice of Supreme Court
c) Prime Minister d) Chief Election Commissioner

49. The duration of State emergency in the first instance is
a) One month b) Two months c) 3 months d) Six months

50. The concept of Election is based on ___
a) Federalism b) Secularism c) Socialism d) Democracy

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