Model Question Paper-I with effect from 2025

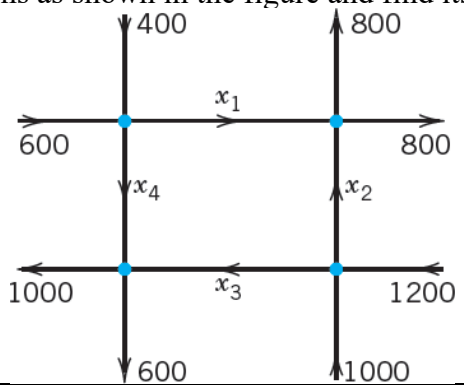
USN | | | | | | | | | | | **1BMATS101**

First Semester B.E./B.Tech. Degree Examination
Calculus & Linear Algebra

TIME: 03Hours **Max.Marks:100**

Note: 1. *Answer any **FIVE** full questions, choosing at least **ONE** 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	Show that $u_x + u_y = u$, if $u = \frac{e^{x+y}}{e^x + e^y}$.	6	L2	1
	b	If $u = x + 3y^2 - z^3, v = 4x^2yz, w = 2z^2 - xy$, find $\frac{\partial(u,v,w)}{\partial(x,y,z)}$ at (1, -1,0).	7	L2	1
	c	Find the extreme values of the function $f(x,y) = xy + \frac{a^3}{x} + \frac{a^3}{y}$.	7	L3	1
		OR			
Q 2.	a	If $V = f(r,s,t)$ and $r = \frac{x}{y}, s = \frac{y}{z}, t = \frac{z}{x}$ show that $x\frac{\partial V}{\partial x} + y\frac{\partial V}{\partial y} + z\frac{\partial V}{\partial z} = 0$.	6	L2	1
	B	If $u = \frac{2yz}{x}$, $v = \frac{3zx}{y}$, $w = \frac{4xy}{z}$ then find $\frac{\partial(u,v,w)}{\partial(x,y,z)}$.	7	L2	1
	C	Apply Maclaurin's series, to expand $\cos x \cos y$ in powers of x and y up to second-degree terms.	7	L3	1
		Module-2			
Q 3.	a	If $f = x^2yz$ and $g = xy - 3z^2$, calculate $\nabla(\nabla f \cdot \nabla g)$.	6	L2	1
	b	A vector field is given by $F = (6xy + z^3)\hat{i} + (3x^2 - z)j + (3xz^2 - y)k$. Show that the field is irrotational and hence find its scalar potential.	7	L2	1
	c	Express the vector $\vec{F} = x\hat{\imath} + 2y\hat{\jmath} + yz\hat{k}$ in spherical polar coordinates.	7	L3	1
		OR			
Q 4.	a	Find the directional derivative of $f(x,y,z) = 4e^{2x-y+z}$ at the point $(1,1,-1)$ in the direction towards the point $(-3, 5, 6)$.	6	L2	1
	b	Find $div\,\vec{F}$ and $curl\,\vec{F}$, where $F = grad(x^3 + y^3 + z^3 - 3xyz)$.	7	L2	1
	c	Express the vector $\vec{F} = 2x\hat{\imath} + 3y\hat{\jmath} - z\hat{k}$ in cylindrical polar coordinates.	7	L3	1
		Module-3			

Q 5.	**A**	Find the constant b if the rank of $\begin{bmatrix} 1 & 1 & -1 & 0 \\ 4 & 4 & -3 & 1 \\ b & 2 & 2 & 2 \\ 9 & 9 & b & 3 \end{bmatrix}$ is 3.	**6**	**L2**	2
	b	Find model matrix of $\begin{bmatrix} 4 & 1 \\ 2 & 3 \end{bmatrix}$ and verify its diagonalization.	**7**	**L2**	2
	c	Write the system of linear equations of the traffic flow in the net of one-way street directions as shown in the figure and find its solution. 	**7**	**L3**	2
		OR			
Q 6.	**a**	Investigate the values of λ and μ so that the equations $\begin{aligned} 2x+3y+5z &= 9 \\ 7x+3y-2z &= 8 \\ 2x+3y+\lambda z &= \mu \end{aligned}$ have (i) no solution (ii) unique solution (iii) infinite number of solutions.	**6**	**L2**	2
	b	Apply Gauss Jordan method to approximate the solutions of the system $\begin{aligned} 83x+11y-4z &= 95 \\ 7x+52y+13z &= 104 \\ 3x+8y+29z &= 71 \end{aligned}$ by choosing initial solution $(0,0,0)$. Perform four iterations.	**7**	**L2**	2
	C	Determine the eigenvalues and corresponding eigenvectors for the matrix $\begin{bmatrix} 8 & -6 & 2 \\ -6 & 7 & -4 \\ 2 & -4 & 3 \end{bmatrix}$.	**7**	**L3**	2
		Module-4			
Q 7.	**a**	Verify whether $v=(1,-2,5)$ in $\mathbb{R}^3$ is a linear combination of the vectors $u_1=(1,1,1)$, $u_2=(1,2,3)$ and $u_3=(2,-1,1)$.	**6**	**L2**	3
	b	Determine whether $W=\{(a,b,c)/a+b+c=0\}$ is a subspace of R^3 or not?	**7**	**L2**	3
	c	Find the basis and dimension of the row space, column space and null space of the matrix $\begin{bmatrix} 1 & -1 & 1 & 3 & 2 \\ 2 & -1 & 1 & 5 & 1 \\ 0 & 1 & -1 & -1 & -3 \end{bmatrix}$	**7**	**L2**	3

		OR			
Q 8.	**a**	Find the basis and dimension of the subspace W spanned by $(1,2,3),(2,4,6),(0,1,1)$.	**6**	**L2**	3
	b	Find the inner products $\langle v_1, v_2\rangle, \langle v_1, v_3\rangle$ and $\langle v_2, v_3\rangle$ where $v_1 = (1,1,1,1)$, $v_2 = (1,2,4,5)$ $v_3 = (1,-3,-4,-2)$.	**7**	**L2**	3
	c	Find the coordinates of the vector $v = (1,-3,2)$ with respect to the basis $S = \{(1,1,1),(1,1,0),(1,0,0)\}$.	**7**	**L2**	3
		Module-5			
Q 9.	**a**	Verify whether the transformation $T: R^2 \to R^2$ which is defined by $T(x, y) = (3x+4y, 10x-4y+3)$ is linear or not?	**6**	**L2**	3
	b	Prove that the transformation $F: R^2 \to R^2$ is singular and find its Kernal if the transformation $F(a, b) = (2a-4b, 3a-6b)$.	**7**	**L2**	3
	c	Find the rank and nullity of the transformation $T: R^3 \to R^3$ defined by $T(x, y, z) = (x+y, x-y, 2x+z)$.	**7**	**L2**	3
		OR			
Q 10.	**A**	Check whether the transformation $T: V_1(R) \to V_3(R)$ defined by $T(x) = (x, x^2, x^3)$ is linear or not.	**6**	**L2**	3
	b	Consider the matrix $A = \begin{bmatrix} 2 & 4 \\ 5 & 6 \end{bmatrix}$ which defines a linear operator on $\mathbb{R}^2$. Find the matrix of the linear transformation relative to the basis $S = \{u_1, u_2\} = \left\{\begin{bmatrix} 1 \\ -2 \end{bmatrix}, \begin{bmatrix} 3 \\ -7 \end{bmatrix}\right\}$.	**7**	**L2**	3
		Let F be the linear transformation defined on a vector space R^2 through $F(x, y) = (2x+y, 3x+2y)$, show that F is invertible and hence find F^{-1}.	**7**	**L2**	3

Model Question Paper

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

Course Code: 1BCHES102/202

First Semester B.E. Degree Examination, January 2025

Applied Chemistry for Smart Systems (CSE Stream)

TIME:3 hrs. Max.Marks:100

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

		Module-1	M	L	C
Q.1	**a**	What are organic semiconductors? Explain the types of organic semiconductors used in memory devices.	6	L1	CO1
	b	Write a note on Pentacene semiconductor chip.	**7**	L2	CO1
	c	Illustrate the construction and working of Quantum Light Emitting Diodes (QLEDs) and discuss their applications in modern display technology.	**7**	L2	CO1
		OR			
Q.2	**a**	What are liquid crystals (LCs)? Discuss their classifications.	6	L1	CO1
	b	Explain the synthesis of TiO_2-RAM nanomaterial by the sol–gel method and describe its properties and applications.	**7**	L2	CO1
	c	Illustrate the construction and working principle of Organic Light Emitting Diodes (OLEDs) and discuss their applications in modern electronic displays.	**7**	L2	CO1
		Module–2			
Q.3	**a**	Describe the wet chemical synthesis of Cd–Se quantum dots and list their important applications.	6	L2	CO2
	b	What is Nylon-6,6? Describe its synthesis, properties, and advantages in 3D printing applications.	**7**	L1	CO2
	c	Discuss construction, working principle and applications of quantum dot sensitized solar cells (QDSSCs).	**7**	L2	CO2
		OR			
Q.4	**a**	Explain the structure-property relationship in polymers.	6	L2	CO2
	b	Explain synthesis, properties and applications of polymethyl methacrylate (PMMA)	**7**	L2	CO2
	c	In a sample of a polymer, 150 molecules have the molecular mass 100 g/mol, 200 molecules have the molecular mass 1000 g/mol, 350 molecules have the molecular mass 10,000 g/mol. Calculate the number average and weight average molecular mass of a polymer and also, find the Polymer dispersity index.	**7**	L3	CO1

		Course Code: 1BCHES102/202			
		Module–3			
Q.5	**a**	What are fuel cells? Explain construction and working of solid oxide fuel cell (SOFC).	6	L1	CO3
	b	A copper concentration cell is obtained by combining two copper electrodes of concentrations 0.1M and 0.5 M immersed in copper sulphate solution at 25 ˚C. Write the cell reactions and calculate EMF of the cell.	7	L3	CO3
	c	Explain the construction and working of a Li-ion battery.	7	L2	CO3
		OR			
Q.6	**a**	Explain the construction and working of a Lithium-ion battery.	6	L2	CO3
	b	Illustrate the construction, working and applications of solar photovoltaic cell (PV cell).	7	L2	CO3
	c	Discuss the production of green hydrogen using the TiO_2 photocatalytic method.	7	L2	CO3
		Module–4			
Q.7	**a**	Define the following terms (i) Transducer (ii) Actuators (iii) Sensors	6	L1	CO4
	b	Explain i). Water line corrosion ii). Pitting corrosion.	7	L2	CO4
	c	Apply the concept of galvanization to prevent corrosion in steel structures exposed to marine environments. Justify your choice with appropriate chemical reasoning.	7	L3	CO4
		OR			
Q.8	**a**	What is corrosion? Explain electrochemical theory of corrosion by taking iron as an example.	6	L1	CO4
	b	Explain the applications of Electrochemical gas sensors in sensing SO_X and NOx	7	L2	CO4
	c	What is CPR? A thick sheet of area 93 $inch^2$ is exposed to air near the ocean. After a 6 months it was found to experience a weight loss of 360 g due to corrosion, if the density of the steel is 7.9 g/cm^3. Calculate the corrosion penetration rate in mpy and mmpy (Given K = 534 in mpy and 87.6 mm/y).	7	L3	CO4
		Module–5			
Q.9	**a**	Describe the role of artificial intelligence in e-waste management.	6	L1	CO4
	b	Apply the concept of green synthesis for the production of ZnO nanoparticles.	**7**	L3	CO4
	c	Discuss the synthesis and properties of alginate hydrogel with reference to its applications in brain–computer interfaces (BCIs).	**7**	L2	CO4
		OR			
Q.10	**a**	Describe the sources and composition of e-waste.	6	L1	CO4
	b	Discuss the process of gold extraction from e-waste using the bioleaching method.	**7**	L2	CO4
	c	Explain the synthesis and properties of polylactic Acid (PLA) in touch screen applications.	**7**	L2	CO4

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Model question Paper-I

CBCS SCHEME

First/ Second Semester B.E Degree Examination, 2025-26

Introduction to AI and Applications (1BAIA103/203)

TIME: 03 Hours **Max.Marks:100**

Notes:

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

		Module -1	M	L	C
Q.01	a	What is Artificial Intelligence. Explain how does AI work? List out three advantages and disadvantages of Artificial Intelligence.	8	L2	CO1
	b	Compare weak AI and strong AI.	6	L2	CO1
	c	What is Machine Learning. Relate AI and Machine Learning?	6	L2	CO1
		OR			
Q.02	a	Explain five components of Intelligence with example. Compare Inductive reasoning with deductive reasoning.	8	L2	CO1
	b	What is AI Agent? Classify the agents in an AI system.	6	L2	CO1
	c	Is Depth First Search (DFS) an informed search or uninformed search? Justify your answer	6	L2	CO1
		Module-2			
Q. 03	a	Apply ethical prompt construction to minimize bias in AI-generated content.	8	L3	CO4
	b	Develop a use-case scenario where prompt engineering improves communication clarity in cross-cultural conversations.	6	L3	CO4
	c	Design a Few-Shot Prompt that trains ChatGPT to classify customer feedback as positive, neutral, or negative.	6	L3	CO4
		OR			
Q.04	a	Apply creative prompts to generate innovative ideas for a sustainable startup project.	8	L3	CO4
	b	Develop imaginative prompts to enhance product design creativity in engineering students.	6	L3	CO4
	c	Apply LLM-based writing prompts to produce creative content for digital marketing campaigns.	6	L3	CO4
		Module-3			
Q. 05	a	Write Basic neural network model explaining the function of each layer.	8	L2	CO2
	b	"ML Model is a combination of Task, Performance and Experience", Explain with suitable an example.	6	L2	CO2
	c	Is Labelled data supervised or unsupervised machine learning? Extend your answer explaining different types of machine learning.	6	L2	CO2
		OR			
Q. 06	a	Outline K-Means Algorithm with merits and demerits.	8	L2	CO2
	b	A company decides to carry out its business operations on a rented space. If the cost of the rental space is Rs 20000 plus Rs 500 per employee per day, then compute monthly rental for space given that the company is open 5 days a week. Show a linear equation for this scenario with explanation.	6	L2	CO2
	c	Explain the four steps to create Decision Trees with suitable example for each step.	6	L2	CO2
		Module-4			

Q. 07	a	List and explain any four Trusted AI principles.	8	L2	CO5
	b	What is expert system? Explain three components of expert system.	6	L2	CO5
	c	Relate the role of ethics in AI.	6	L2	CO5
		OR			
Q. 08	a	Explain the working of an expert system taking any example.	8	L2	CO5
	b	AI could be programmed to do something beneficial, but the method used to achieve its goal can be highly destructive, Explain why?	6	L2	CO5
	c	What is Artificial Intelligence of Things (AIoT). Explain how Does AIoT Work?	6	L2	CO5
		Module-5			
Q. 09	a	List different types of Robots. Identify and explain industry application of Robots.	8	L3	CO3
	b	What is No-Code AI. Explain why No-Code AI Must be Used?	6	L2	CO3
	c	Explain the role of AI in early disease prevention.	6	L2	CO3
		OR			
Q. 10	a	What is the role of AI in Medical Diagnosis? Identify three applications of AI in Medical Diagnosis.	8	L3	CO3
	b	Relate the role of AI in Biology and Environmental Sciences.	6	L2	CO3
	c	What is Low Code AI. Compare Traditional tools with Low Code AI.	6	L2	CO3

Model Question Paper – II with effect from 2025-26 (CBCS Scheme)

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

First/Second Semester B.E. Degree Examination

Subject Title: Introduction to AI and Applications

TIME: 03 Hours **Max. Marks: 100**

Note:
1. Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.
2. Provide block diagrams wherever necessary.
3. Missing data may be suitably assumed.

		Module -1	M	L	C
Q.01	a	Define Artificial Intelligence (AI). Explain how do AI systems work and give advantages and disadvantages of this technology.	8	L2	CO1
	b	Differentiate between the following: (i) Inductive and deductive reasoning (ii) Human and machine intelligence (iii) Episodic and non – episodic environment	6	L2	CO1
	c	What are knowledge – based agents? Explain their role and architecture of agent based system.	6	L2	CO1
		OR			
Q.02	a	Outline the merits and demerits of the following search algorithms. (i) Breadth First Search (BFS) (ii) Uniform Cost Search (UCS) (iii) Depth – First Search (DFS)	8	L2	CO1
	b	Compare traditional programming with machine learning.	6	L2	CO1
	c	Summarize the major phases in AI evolution.	6	L2	CO1
		Module-2			
Q. 03	a	A user repeatedly gets ambiguous answers from an AI tool. Apply prompt - engineering strategies to redesign the prompt to improve clarity and intent.	8	L3	CO4
	b	Build a zero-shot prompt to classify comments as positive or negative. Explain why it qualifies as zero-shot.	6	L3	CO4
	c	Develop a writing prompt that helps a student begin an essay on "The Impact of Social Media on Teenagers." Explain how the prompt stimulates the writing process.	6	L3	CO4
		OR			
Q.04	a	You are building a customer – support assistant using a Large Language Model (LLM). Develop a prompt that ensures the model responds politely and provides step-by-step troubleshooting guidance. Explain how your prompt uses principles of prompt engineering.	8	L3	CO4
	b	Develop a one-shot example to help an LLM convert active voice to passive voice. Illustrate with the example and the instruction.	6	L3	CO4
	c	Build a creative prompt that encourages ChatGPT to propose futuristic transportation ideas. Explain how this promotes imaginative thinking.	6	L3	CO4
		Module-3			
Q. 05	a	Explain how Linear Regression, Logistic Regression, and Polynomial Regression can be applied to analyze and predict real-world data in Artificial Intelligence and Machine Learning.	8	L2	CO2
	b	Define conditional probability and the Bayes rule with examples.	6	L2	CO2
	c	Differentiate between the following: (i) Supervised and Unsupervised Machine Learning (ii) Forward and Backward Propagation	6	L2	CO2

		(iii) Classification and Regression			
		OR			
Q. 06	a	Explain how Machine Learning, Deep Learning, and Natural Language Processing techniques can be applied to solve real-world problems in Artificial Intelligence.	8	L2	CO2
	b	Summarize the features of: (i) Reinforcement Learning (ii) Support Vector Machines (SVM)	6	L2	CO2
	c	How does computer vision work with deep learning? Explain the tasks involved in computer vision.	6	L2	CO2
		Module-4			
Q. 07	a	What is Neuromorphic Computing? Explain its architecture, features resembling the human brain, and how it contributes toward achieving Artificial General Intelligence (AGI).	8	L2	CO5
	b	Describe the concept of AI as a Service (AIaaS). Outline two advantages and two challenges of using AIaaS in organizations.	6	L2	CO5
	c	List and explain the risks associated with Artificial Intelligence and their societal impact.	6	L2	CO5
		OR			
Q. 08	a	Explain AI Bias. Describe the sources of bias, real-world examples, and methods to mitigate bias in AI systems.	8	L2	CO5
	b	Explain the major components of an Expert System with their functions.	6	L2	CO5
	c	Differentiate between the following: (i) AI Programs and Robots (ii) Human–controlled and fully – autonomous bots	6	L2	CO5
		Module-5			
Q. 09	a	Identify the application of AI in education, specifically in personalized learning experiences. Explain with examples, how adaptive learning platforms and intelligent tutoring systems use AI to tailor educational content and provide customized support for students.	10	L3	CO3
	b	Explain how AI contributes to environmental science by breaking down its role in climate modelling, air and water quality monitoring, waste management, and resource conservation. Describe the specific data, techniques, and decision-making processes involved in each area.	10	L2	CO3
		OR			
Q. 10	a	Identify the role of AI in scientific experimentation by examining how it supports different disciplines and breaking down the specific experimental activities such as data collection, pattern identification, simulation, and hypothesis testing that AI enhances.	10	L3	CO3
	b	Compare AI – enabled precision farming with traditional farming. Outline the key differences in data usage, cost, and productivity.	10	L2	CO3

*Revised Bloom's Taxonomy Level: Indicate as L1, L2, L3, L4, etc. It is also desirable to indicate the COs and POs to be attained by every bit of questions.

Model Question Paper- I

CBCS SCHEME

First/ Second Semester B.E Degree Examination

Introduction to Mechanical Engineering (1BESC104D)

TIME: 03 Hours **Max. Marks: 100**

Notes:

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

		Module - 1	M	L	C
Q. 1	a	With a neat sketch, explain the working principle of Pelton Turbine.	6	2	1
	b	Discuss the need for a Power steering in an automobile and describe the same.	6	2	1
	c	With a neat sketch, explain the working principle of an Air-conditioning system.	8	2	1
		OR			
Q. 2	a	With a neat sketch, explain the brake system of an automobile.	6	2	1
	b	Summarize the parts involved in making of a Drone and highlight the functions of the parts.	6	2	1
	c	With a neat sketch, explain the working principle of a refrigeration system.	8	2	1
		Module – 2			
Q. 3	a	With the help of neat diagrams, explain the working of a 4-stroke petrol engine.	10	2	2
	b	What do you mean by the term Gear train? With the help of a neat sketch, explain the working of a compound gear train.	10	2	2
		OR			
Q. 4	a	List the advantages and limitations of Electric vehicles and Hybrid vehicles.	10	2	2
	b	What do you mean by the term Automatic transmission in automobiles. Explain the working of the same.	10	2	2
		Module – 3			
Q. 5	a	Explain the classification of engineering materials. Discuss the properties and applications of ferrous and non-ferrous metals.	10	2	3
	b	Explain the working principles and applications of piezoelectric materials and magnetorheological (MR) fluids.	10	2	3
		OR			
Q. 6	a	Define composite materials. Explain their classification based on the type of matrix material, and discuss their applications.	10	2	3
	b	What are smart materials? Explain the different types of smart materials and discuss their advantages and disadvantages.	10	2	3
		Module – 4			
Q. 7	a	Describe the classification of manufacturing processes. Explain the factors that influence the selection of a suitable manufacturing process.	6	2	4
	b	Explain the following operations with neat sketches: (i) Drilling (ii) Reaming	8	2	4
	c	What is CNC? Explain the main components of a CNC machine.	6	2	4
		OR			
Q. 8	a	Define the soldering, brazing, and welding processes	6	2	4
	b	With neat sketches, explain any two operations performed on Milling machine.	8	2	4
	c	Explain the basic principle of 3D printing.	6	2	4

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Module – 5					
Q. 9	a	Define automation and explain the different types of automation.	6	2	5
	b	With a neat diagram, explain the working principle and applications of a capacitive sensor.	8	2	5
	c	Explain the need for integration of technologies in modern engineering systems.	6	2	5
OR					
Q. 10	a	Define mechatronics and explain the main elements of a mechatronic system.	6	2	5
	b	What is an optical encoder? Explain its working principle and industrial uses.	8	2	5
	c	Describe Advanced Driver Assistance Systems (ADAS) and explain its important features.	6	2	5

Model Question Paper- I

CBCS SCHEME

First/ Second Semester B.E Degree Examination, 2025-26

PYTHON PROGRAMMING (1BPLC105B/205B)

TIME: 03 Hours **Max. Marks:100**

Notes:

1. *Answer any FIVE full questions, choosing at least ONE question from each MODULE*
2. *M: Marks, L: Bloom's level, C: Course outcomes.*
3.

		Module - 1	M	L	C
Q.1	a	Explain the concept of type conversion in Python. Differentiate between implicit and explicit conversion with examples.	08	L2	CO1
	b	Develop a Python program with a while loop to display the Fibonacci sequence up to n terms entered by the user.	08	L3	CO1
	c	Differentiate between a syntax error and a runtime error with examples.	04	L2	CO1
		OR			
Q.2	a	Describe the Collatz 3n + 1 sequence and explain how iteration and conditional statements are used in its implementation.	08	L2	CO1
	b	Develop a program that prints all numbers from 1 to 100 that are divisible by 3 or 5 but not both. Use continue or break statements wherever suitable.	08	L3	CO1
	c	What is meant by function composition? Illustrate with an example.	04	L2	CO1
		Module – 2			
Q.3	a	Explain the string operations in Python for slicing, concatenation, repetition, and comparison with suitable examples.	8	L2	CO2
	b	Define a list. How is it different from an array? Develop a Python statement to access the third element of a list: nums = [3, 6, 9, 12].	6	L3	CO2
	c	Develop a program to count the number of words in a given line of text.	6	L3	CO2
		OR			
Q.4	a	Explain mutability in lists. Illustrate the difference between modifying a list and creating a clone of it using examples.	8	L2	CO2
	b	Develop a Python program to check if a string is a palindrome using slicing.	6	L3	CO2
	c	Develop a program that takes a list of numbers and returns a new list containing only the even numbers.	6	L3	CO2
		Module – 3			
Q5	a	Develop a Python program that counts the frequency of words in a paragraph using a dictionary and displays the top three most frequent words.	8	L3	CO2
	b	What is masking in NumPy? Develop a program to illustrate masking to filter array elements.	6	L3	CO3
	c	Explain the use of the 'with' statement in file handling with a program.	6	L2	CO4
		OR			
	a	Explain the key features and operations of Python dictionaries. How are they different from lists? Develop suitable program to illustrate insertion, deletion, and lookup.	8	L3	CO2
	b	Develop a NumPy program to: Create a 3×3 matrix of random integers. Display its shape, transpose, and mean of all elements.	6	L3	CO3

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	c	Explain how binary files differ from text files in terms of content and operations. Illustrate with suitable program segments.	6	L2	CO4
Module – 4					
Q.7	a	Explain the use of random and time modules in Python. Develop a program that simulates a simple stopwatch that records random time intervals and calculates the average elapsed time.	8	L3	CO3
	b	Explain the concept of namespaces in Python. Develop program to illustrate how variable lookup follows the LEGB (Local, Enclosing, Global, Built-in) rule.	8	L3	CO3
	c	Differentiate between class attribute and instance attribute with suitable program segments.	4	L2	CO5
OR					
Q.8	a	Develop python script to create a module utilities.py with functions for square, cube, and factorial of a number. Import it in another file using all three import variants. Demonstrates the usage of each of the imported function.	8	L3	CO3
	b	Develop a custom module having function which calculates factorial of a number. Import this custom module to a program to calculate binomial coefficient.	8	L3	CO3
	c	Explain the difference between ‘is’ and ‘==’ operators using immutable objects.	4	L2	CO5
Module – 5					
Q.9	a	Create a Python class Point with attributes x and y. Demonstrate sameness using ‘is’ operator, and show the effect of mutability when modifying one reference.	8	L3	CO5
	b	Explain the need for exception handling in Python. Develop a program to illustrate: try, except, else, and finally blocks.	8	L3	CO5
	c	What is operator overloading? Illustrate with example using __add__().	4	L2	CO5
OR					
Q.10	a	Develop a program to illustrate polymorphism by defining a common interface method in two different classes.	8	L3	CO5
	b	Outline the difference between pure functions and modifiers. Develop a program code illustrating both using a class BankAccount.	8	L3	CO5
	c	Explain the role of finally clause with an example.	4	L2	CO5

Model Question Paper- I

CBCS SCHEME

First/ Second Semester B.E Degree Examination, 2025-26

Introduction to C Programming (1BPLC105E/205E)

TIME: 03 Hours **Max.Marks:100**

Notes:

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

		Module -1	M	L	C
Q.01	a	Define algorithm. Outline an algorithm to convert temperature from Fahrenheit to Celsius.	8	L2	CO1
	b	Define functions. Explain basic structure of a C Program.	5	L2	CO1
	c	Explain Input and Output functions in C Programming with suitable example	7	L2	CO1
		OR			
Q.02	a	Explain the role of flow chart in program development. List the symbols used in designing a flowchart. Illustrate with one example.	8	L2	CO1
	b	List the features of C programming language. Explain the process of compiling and executing a C Program.	5	L2	CO1
	c	Define Identifier. List the rules for framing an identifier with an example to each rule.	7	L2	CO1
		Module-2			
Q. 03	a	Explain the following operators i) Increment and Decrement operators. ii) Logical Operators	8	L2	CO1
	b	Explain the else if ladder with syntax and a suitable program.	6	L2	CO2
	c	Outline the syntax of switch statement. Given an integer between 1 to 7 representing the day of week, develop a program to display day in words using switch statement [E.g. for a number 1, print Sunday and for number 7, print Saturday]	6	L3	CO2
		OR			
Q.04	a	Show the evaluation order of the following expression with intermediate and final values: 100/20<=10-5+100%10-20==5>=1!=20	8	L2	CO1
	b	Differentiate between entry controlled loop and exit controlled loop.	6	L2	CO2
	c	Develop a C program to find the sum of first n numbers using while loop.	6	L3	CO2
		Module-3			
Q. 05	a	Define string. Develop a program to read a string, reverse the string and print.	6	L3	CO3
	b	Define array. List and explain the types of arrays.	6	L2	CO3
	c	Develop a program to multiply two N*N matrices.	8	L3	CO3
		OR			
Q. 06	a	Develop a program to find the length of a string without using built in function.	6	L3	CO3
	b	Explain declaring and initialization one, and two-dimensional arrays with suitable examples.	6	L2	CO3
	c	Develop a program to read N numbers and find the sum and average of N numbers using an array.	8	L3	CO3
		Module-4			
Q. 07	a	Define function in C. Justify the need of user defined functions in C with a suitable program.	8	L2	CO4
	b	Explain with example "No arguments and no return values" of functions.	6	L2	CO4

	c	Develop a C program to perform arithmetic operations (+, -, /, *) using user defined functions.	6	L3	CO4
OR					
Q. 08	a	List and Explain the various elements of user defined functions.	8	L2	CO4
	b	What is nested function? Explain with example.	6	L2	CO4
	c	Develop a suitable program having a function with arguments and no return value.	6	L3	CO4
Module-5					
Q. 09	a	Define structure. Explain the general format of a structure definition.	6	L2	CO5
	b	Define pointer. Illustrate declaring and initialization of a pointer variable.	6	L2	CO5
	c	Define a structure type student that would contain student name, 3 subject marks Using this structure, Develop a C program to read four students data from keyboard and print the same on the screen.	8	L3	CO5
OR					
Q. 10	a	Differentiate between arrays and structures with an example.	6	L2	CO5
	b	Illustrate with suitable code for swapping of two numbers using pointers.	6	L2	CO5
	c	Develop a program to copy and compare of structure variables.	8	L3	CO5

Model Question Paper- I

CBCS SCHEME

First/ Second Semester B.E Degree Examination, 2025-26

Programming in C (1BEIT105/205)

TIME: 03 Hours **Max.Marks:100**

Notes:

1. *Answer any FIVE full questions, choosing at least ONE question from each MODULE*
2. *M: Marks, L: Bloom's level, C: Course outcomes.*
3.

		Module - 1	M	L	C
Q.1	a	Define data type. Explain primitive data types supported in C language with example.	6	L2	CO1
	b	Explain the general form of a C program with example.	8	L2	CO1
	c	Develop a C program to multiply, subtract and division by taking two whole numbers. Choose suitable datatypes for variables.	6	L3	CO5
		OR			
Q.2	a	What is variable? Explain the rules to construct variables. Classify the following as valid/invalid Identifiers. i) num2 ii) $num1 iii) +add iv) a_2 v) 199_space vi) _apple vii) #12	6	L2	CO1
	b	Show the evaluation of the following expressions with intermediate and final values. i) x = a - b/3 + c * 2 - 1 when a = 9, b = 12, c = 3 ii) 10! = 10 || 5 < 4 && 8.	8	L2	CO1
	c	Develop C program which takes as input p, t, r and calculates the simple interest. Choose suitable data types for variables.	6	L3	CO5
		Module – 2			
Q.3	a	With a suitable example, explain formatted input and output statements.	6	L2	CO1
	b	List the conditional branching statements in 'C'. Explain any two with suitable examples.	6	L2	CO2
	c	Develop a C program to print Floyd's triangle for N rows (N >0). Choose suitable control statements. [for n=4] 1 2 3 4 5 6 7 8 9 10	8	L3	CO5
		OR			
Q.4	a	Explain Jump Statements, Expression Statements, Block Statements with suitable examples.	6	L2	CO1
	b	Explain the role of break and continue statements in C with suitable examples.	6	L2	CO2
	c	Develop a simple calculator program in C language for simple operations like addition, subtraction, multiplication and division. Choose suitable selection statement.	8	L3	CO5
		Module – 3			
Q.5	a	Define an array. How a single dimension and two-dimensional arrays are declared and initialized? Illustrate with suitable examples.	8	L2	CO2
	b	Define variable length array. Illustrate how variable length array is different	6	L2	CO2

Model Question Paper- I

		from static array.			
	c	Develop a C program to swap the values of two integer variables using pointers.	6	L3	CO2
		OR			
Q.6	a	Define a pointer. How do you declare and initialize pointers in C. Explain accessing array elements using a pointer.	8	L1	CO2
	b	Show with a suitable program, how a single dimensional array can be passed to a function.	6	L2	CO2
	c	Develop a C program that reads N integers, stores them in an array and calculates the sum of all array elements.	6	L3	CO2
		Module – 4			
Q.7	a	Define function. Explain the syntax of function definition and function declaration with a simple example.	6	L2	CO3
	b	Define dynamic memory allocation. List and explain the different functions to handle dynamic memory allocation in C.	6	L2	CO3
	c	Define recursion. Develop a C program and a function to compute factorial of a given number using recursion.	8	L3	CO3
		OR			
Q.8	a	List the advantages of functions in programming. With suitable program, how pointer is initialized to a function for call/reference?	6	L2	CO3
	b	Explain TWO techniques of parameter passing to functions with suitable program segments.	6	L2	CO3
	c	Develop a C-program and a function to check whether the given number is prime or not.	8	L3	CO3
		Module – 5			
Q.9	a	Define a structure in C. Explain the different types of structure declarations with examples.	6	L2	CO4
	b	Describe a method to compare two structure variables of the same type, and provide a simple example.	6	L2	CO4
	c	Define a structure with a name **student**. Develop a C program that uses a structure named **student.** The program should read and display the details of 'N' students, compute the average marks of the class, and identify the students who have scored marks above and below the class average.	8	L3	CO4
		OR			
Q.10	a	Compare the structure and union in terms of syntax, storage and uses/applicability.	6	L2	CO4
	b	Define Enumerated data type. Explain the declaration and access of enumerated data types with the help of C program segment.	6	L2	CO4
	c	Develop a C program to access and modify the members of structures, in array of structures in C.	8	L3	CO4

Model Question Paper

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Course Code: 1BPHYS102

First Semester B.E. Degree Examination, January 2025
Quantum Physics and Applications (CSE Stream)

TIME:3 hrs. **Max.Marks:100**

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

		Module-1	M	L	C
Q.1	a	Use the time-independent Schrödinger wave equation for the particle in an infinite well to arrive at an expression for the eigenvalues and eigen functions.	8	L2	CO1
	b	Discuss Heisenberg's uncertainty principle and state the three relationships. Use the energy-time uncertainty to explain the broadening of spectral lines.	8	L2	CO1
	c	Calculate the change in the de Broglie wavelength of an electron decelerated through a potential difference of 1 kV from 5 kV to 4 kV.	4	L3	CO1
		OR			
Q.2	a	Use the classical wave equation to arrive at an expression for the time independent Schrodinger equation.	7	L2	CO1
	b	Discuss the principle of complementarity and physical significance of a wave function.	8	L2	CO1
	c	Calculate first three energy eigen values in an one-dimensional infinite well of width 1 nm.	5	L3	CO1
		Module–2			
Q.3	a	Explain the Failure of Classical free electron theory of metals and the Assumptions of Quantum free electron theory.	8	L2	CO2
	b	Derive an expression for the electron carrier concentration in an intrinsic semiconductor at temperature T in the low temperature limit.	8	L2	CO2
	c	Calculate the probability of an electron occupying an energy level 0.02eV below the Fermi level at 400K.	4	L3	CO2
		OR			
Q.4	a	Prove that the Fermi energy in an intrinsic semiconductor at finite temperature differs from its value at T =0 K by a value proportional to the temperature.	7	L2	CO2
	b	With a neat labeled diagram, derive an expression for the Hall voltage and its applications.	8	L2	CO2
	c	A semiconductor sample 0.5 mm thick carries a current of 5 mA in a magnetic field of 0.2 T. If the Hall voltage is 1 mV, determine the Hall coefficient.	5	L3	CO2
		Module–3			
Q.5	a	With the help of a diagram, explain the concept of Cooper pair tunneling process and retro-reflection at N-S interface.	8	L2	CO3
	b	Explain Josephson Junction with a diagram. What is flux quantization ? Explain DC & AC Josephson effect.	8	L2	CO3

	c	A superconducting wire of radius 0.25 mm carries a persistent current in a magnetic field of 0.05 T. Calculate the critical current.	4	L3	CO3
OR					
Q.6	**a**	What are phonons? Explain the role of phonons in Cooper pair formation.	7	L2	CO3
	b	Distinguish between Type I and Type II superconductors using M–H characteristics.	8	L2	CO3
	c	For a superconducting sample with critical temperature 7.2 K and critical field at 0K is 6.5×10^{4} Am^{-1}, find the critical field at 4 K	5	L3	CO3
Module-4					
Q.7	**a**	Derive an expression for the numerical aperture and acceptance angle of an optical fibre, with the help of a neat labeled diagram.	8	L2	CO4
	b	Explain the working of a SNSPD with a neat diagram.	7	L2	CO4
	c	A fiber has a core refractive index of 1.48 and a cladding index of 1.46. Calculate its numerical aperture (NA) and acceptance angle in air.	5	L3	CO4
OR					
Q.8	**a**	Explain the principle and working of a Single Photon Avalanche Diode.	8	L2	CO4
	b	Derive an expression for the energy density using Einstein's A and B coefficients.	7	L2	CO4
	c	Calculate the V-number and number of modes supported by an optical fiber of core radius 25 μm, operating at wavelength 1.3 μm with NA = 0.2.	5	L3	CO4
Module–5					
Q.9	**a**	Define a qubit. Explain the concept of superposition and represent it on the Bloch sphere.	7	L2	CO5
	b	Explain quantum entanglement and discuss its importance in quantum communication.	7	L2	CO5
	c	A quantum state is given by$\|\psi\rangle = (1/\sqrt{3})\|0\rangle + (\sqrt{2}/\sqrt{3})\|1\rangle$. Calculate the probability of obtaining $\|1\rangle$ and the expectation value of σ_z.	6	L3	CO5
OR					
Q.10	**a**	Explain the Hadamard gate with its matrix representation and show its action on $\|0\rangle$ and $\|1\rangle$ states.	7	L2	CO5
	b	Discuss the operation of the CNOT gate and explain how it can create Bell states.	7	L2	CO5
	c	A two-qubit system is initially in the state $\|00\rangle$. It passes through a Hadamard gate on the first qubit followed by a CNOT gate. Determine the final state vector.	6	L3	CO5

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Model Question Paper

Course & Branch	**BE**	**Semester:**	I
Subject	**Communication Skills**	**Max. Marks:**	**50**
Subject Code	**1BENG106**	**Duration:**	2 Hours

Instructions to Candidates

1. **This question paper consists of Multiple-Choice Questions (MCQs) carrying a total of 50 marks.**
2. **All questions are compulsory.**
3. **Each question carries 1 mark.** The question paper contains **50 MCQs × 1 mark = 50 marks.**
4. **Read each question carefully** before selecting the most appropriate answer.
5. **Each question has four alternatives (A, B, C, and D).** Only **one option is correct**.
6. **Choose the correct answer and mark it clearly**:
   - In OMR-based exams: darken the appropriate bubble completely.
   - In written exams: write only the option letter (A/B/C/D) or the full answer as instructed.
7. **No marks will be awarded for partially correct answers.**
8. **There is no negative marking** for incorrect answers.

Multiple Choice Questions		CO's	LO	Marks	Duration
Q No.	**Choose the correct option for the following.**	**1-5**	**Lo1**	**50X1=50**	**1 Hour**
Unit 1					
1	**An engineer explaining a project to a client adjusts language and tone based on the listener. This reflects which element of communication?** a) Noise b) Context c) Feedback d) Encoding				
2	Folding arms, avoiding eye contact, and leaning back during a meeting mainly relate to: a) Verbal communication b) Written communication c) Non-verbal communication d) Formal communication				
3	**Standing too close to a colleague during a discussion may create discomfort due to poor use of:** a) Chronemics b) Proxemics c) Kinesics d) Paralanguage				
4	**Arriving late to a professional meeting shows lack of awareness of:** a) Proxemics b) Chronemics c) Phonemics d) Semantics				
5	**A message becomes unclear due to poor pronunciation and background noise. This is an example of:** a) Feedback b) Channel c) Barrier to communication d) Encoding				

6	**Choosing the correct form of a word such as *noun* or *verb* while writing a report relates to:** a) Sentence stress b) Parts of speech c) Intonation d) Voice
7	**"The report was submitted on time" is an example of:** a) Simple sentence b) Active voice c) Passive voice d) Compound sentence
8	**Misunderstanding between *record* (noun) and *record* (verb) mainly occurs due to change in:** a) Intonation b) Stress c) Syllable structure d) Tone
9	**Stress placed incorrectly on technical words may affect**: a) Grammar accuracy b) Speech intelligibility c) Writing style d) Vocabulary range
10	**Rising and falling voice patterns while speaking mainly refer to:** a) Accent b) Intonation c) Rhythm d) Pitch
	Unit 2
11	**Introducing yourself confidently during campus recruitment reflects skill in:** a) Reading b) Writing c) Speaking d) Proofreading
12	**A role-play where an employee handles a dissatisfied client mainly develops**: a) Memorization b) Interpersonal communication c) Grammar accuracy d) Vocabulary recall
13	**Participating in a group discussion requires mainly:** a) Speaking continuously b) Listening and responding logically c) Dominating others d) Memorizing facts
14	**While delivering a PEP Talk, the speaker focuses on motivation and confidence. This supports:** a) Personal empowerment b) Technical accuracy c) Grammar correction d) Pronunciation drills
15	**Skimming an interview article helps a reader to:** a) Understand every detail b) Identify main ideas quickly c) Analyze grammar d) Learn vocabulary
16	**Scanning a case study is useful mainly to:** a) Read emotionally b) Locate specific information c) Enjoy narration d) Improve pronunciation
17	**Writing a short biography of an achiever mainly develops**: a) Creative writing b) Reflective and structured writing c) Technical documentation d) Email drafting
18	**"He has completed the project successfully" represents which sentence pattern?** a) S + V b) S + V + O c) S + V + O + C d) S + V + Adj
19	**Understanding idioms like *"break the ice"* helps in:** a) Literal translation b) Vocabulary development

	c) Grammar correction d) Pronunciation practice
20	**Using appropriate idioms during presentations improves:** a) Accent b) Fluency and natural expression c) Speed of speech d) Formal tone
	Unit 3
21	**Writing a formal enquiry letter requires primarily:** a) Informal tone b) Polite and structured language c) Emotional expressions d) Slang
22	**Reporting someone's words indirectly involves:** a) Active voice b) Passive voice c) Reported speech d) Conditional clauses
23	**The issue has been resolved by the team" is an example of:** a) Active voice b) Passive voice c) Simple present d) Future tense
24	**Writing a professional email requires clarity in:** a) Font size only b) Subject, tone, and structure c) Length only d) Emotional language
25	**Replying late to professional emails mainly affects:** a) Grammar b) Digital etiquette c) Vocabulary d) Accent
26	**Writing a paragraph that argues for renewable energy is an example of:** a) Narrative writing b) Descriptive writing c) Argumentative writing d) Story writing
27	**Blog writing mainly encourages:** a) Rigid structure b) Personal voice with clarity c) Formal reporting d) Technical documentation
28	**Proofreading helps to identify errors in:** a) Content only b) Spelling, punctuation, and grammar c) Tone only d) Formatting only
29	**Identifying incorrect verb tense in a sentence relates to:** a) Editing b) Error identification c) Summarising d) Skimming
30	**Using question tags like *"isn't it?"* helps in:** a) Giving commands b) Confirming information politely c) Avoiding interaction d) Giving instructions
	Unit 4
31	**Framing effective search keywords improves**: a) Typing speed b) Accuracy of search results c) Grammar skills d) Pronunciation
32	**Using quotation marks in online search mainly helps to:** a) Increase speed b) Narrow search results c) Add emotion d) Avoid plagiarism
33	**Webinars mainly support which type of communication?** a) Asynchronous b) Synchronous c) Written d) One-way

34	**Discussion forums are examples of**: a) Synchronous communication b) Asynchronous communication c) Face-to-face communication d) Formal interviews
35	**Posting respectful comments online reflects:** a) Digital literacy b) Netiquette c) Coding skills d) Technical writing
36	**Excessive informal language on professional platforms may affect:** a) Speed b) Online reputation c) Grammar accuracy d) File size
37	**Tools like Grammarly primarily help in**: a) Content creation b) Grammar and clarity checking c) Voice modulation d) Plagiarism creation
38	**Using others' ideas without citation is called:** a) Referencing b) Paraphrasing c) Plagiarism d) Quoting
39	**Academic integrity mainly promotes**: a) Speed of writing b) Ethical use of information c) Creative freedom d) Informal tone
40	**Proper citation helps to:** a) Increase word count b) Avoid infringement c) Improve pronunciation d) Add complexity
	Unit 5
41	**Listening to TED Talks mainly improves:** a) Grammar accuracy b) Listening comprehension and ideas c) Writing speed d) Vocabulary memorization
42	**Maintaining eye contact during interviews reflects:** a) Nervousness b) Non-verbal confidence c) Aggression d) Informality
43	**Telephone interviews mainly assess:** a) Body language b) Pronunciation and clarity c) Writing skills d) Dressing style
44	**Formal professional language is best used when:** a) Talking with friends b) Writing job applications c) Posting on social media d) Casual texting
45	**A Statement of Purpose mainly highlights:** a) Personal background only b) Career goals and motivation c) Technical errors d) Informal achievements
46	**Reading a company profile before interviews help to:** a) Increase confidence b) Answer questions relevantly c) Improve accent d) Memorize facts
47	**A well-structured resume mainly improves:** a) Pronunciation b) First impression c) Writing speed d) Grammar rules

48	**Conditional clauses are commonly used when discussing:** a) Past facts b) Possibilities and outcomes c) Commands d) Descriptions
49	**Modal verbs like *should* and *must* express:** a) Time b) Obligation and advice c) Condition d) Voice
50	**Using appropriate technical vocabulary in interviews reflects:** a) Memorization b) Professional competence c) Informality d) Emotional appeal

First Semester B E. Degree Examination. Dec.2025/Jan.2026
Communication Skills
VTU MODEL QUESTION PAPER
(WITH SCHEME & SOLUTION)

Time: 1hr. Max. Mark: 50

INSTRUCTIONS TO THE CANDIDATE

1. Answer all fifty questions; each question carries ONE mark.
2. After selecting your answer, tick the appropriate circle corresponding to the same question number on the answer sheet.
3. Ticking two circles for the same question makes the answer invalid.

1. What does **"Communicative English" refer to?**

A. Fluent reading skills
B. Ability to write essays
C. Effective use of English for communication
D. Learning English vocabulary

Answer: (C)

2. Why is English important for global interaction?

A. It's a universal language for business.
B. It's a native language in most countries.
C. It's the easiest language to learn.
D. It has a simple grammar structure.

Answer: (A)

3. What does the term 'communication' refer to?

A. Conveying information only
B. Conveying feelings and emotions
C. Conveying information, ideas, thoughts, and more
D. Nonverbal communication only

Answer: (C)

4. Non-verbal communication does not include

A. Gestures
B. Posture
C. Silence

D. Words

Answer: (D)

5. Which of the following is a psychological barrier to effective communication?

A. Background noise

B. Lack of attention

C. Limited vocabulary

D. Technical jargon

Answer: (B)

6. An employee sends a suggestion about improving a process directly to the CEO. This is an example of:

A. Downward communication

B. Horizontal communication

C. Diagonal communication

D. Upward communication

Answer: (D)

7. Chronemics refers to:

A. Use of physical touch

B. Study of time in communication

C. Facial expressions

D. Writing style and structure

Answer: (B)

8. She is still a _____.

A. bachelor

B. spinster

C. female bachelor

D. becheloress

Answer: (B)

9. What is the syllabic structure of the word "dictionary"?

A. CVC-V-CVC

B. VC-CVC

C. V-CV-CV-CV

D. CVC-CVC-VCV

Answer: (D)

10. What is one of the most common mistakes among new English learners related to pronunciation?

A. Vocabulary usage
B. Punctuation errors
C. Misuse of prepositions
D. Mispronunciation

Answer: (D)

11. Which of the following is most essential in delivering an effective PEP Talk?

A. Use of complex vocabulary
B. Clear and inspiring message
C. Lengthy explanations
D. Reading directly from notes

Answer: (B)

12. Which of these qualities is important in a group discussion?

A. Hostility
B. Aggressiveness
C. Emotional stability
D. Ignorance

Answer: (C)

13. In a group discussion, we should be _____.

A. Assertive
B. Dominating
C. Subjective
D. Ignorant

Answer: (A)

14. A presentation is a form of oral communication in which a person shares factual information with a _____ audience.

A. Mixed
B. Large
C. Specific
D. Small

Answer: (C)

15. When using scanning to read an achiever's interview, the reader should:

A. Look for the general mood of the passage

B. Read slowly and carefully for each sentence

C. Search for specific details such as dates, achievements, or quotes

D. Summarize the entire text in their own words

Answer: (C)

16. To select the content of a presentation, you should know:

A. The available material

B. Your time limit

C. The audience's needs

D. Your purpose

Answer: (D)

17. What is the correct sequence when writing a short biography based on reflections?

A. Achievements → Death → Early life → Advice

B. Early life → Education → Career/achievements → Reflections/advice

C. Advice → Early life → Achievements → Education

D. Career → Early life → Reflections → Education

Answer: (B)

18. Identify the sentence pattern: "She reads books."

A. S + V

B. S + V + O

C. S + V + IO + DO

D. S + V + C

Answer: (B)

19. Choose the sentence that follows the pattern S + V + C (Subject + Verb + Complement):

A. He wrote a letter.

B. She is a doctor.

C. The boy kicked the ball.

D. They offered him a job.

Answer: (B)

20. You really hit the nail ____ in your speech.

A. in your head

B. over the head

C. above the head

D. on the head

Answer: (D)

21. Which among these should not be present in a formal letter?

A. The name of the firm

B. The date

C. Business jargon

D. Courteous leave-taking

Answer: (C)

22. When responding to an email, what is considered best practice?

A. Reply as soon as possible, preferably 24 hours

B. Wait at least a week before replying

C. Only respond if you agree with the content

D. Forward the email to others before replying

Answer: (A)

23. What is the main purpose of a concluding sentence?

A. Introduce a new idea

B. Summarize the paragraph and provide closure

C. Confuse the reader

D. Make the paragraph

Answer: (B)

24. Identify the grammatical error in the sentence:

"He don't know the answer."

A. Spelling error

B. Subject-verb agreement error

C. Punctuation error

D. Word choice error

Answer: (B)

25. Which tool can assist in proofreading but should not be fully relied upon?

A. Dictionary

B. Spell check/Grammar check software

C. Thesaurus

D. Notebook

Answer: (B)

26. Which of the following is a non-Wh question?

A. Where are you going?

B. Why is she late?

C. Do you like coffee?

D. What is your name?

Answer: (C)

27. Identify the correct question tag:

"You are a student, _____?"

A. are you

B. aren't you

C. is you

D. isn't you

Answer: (B)

28. I shall be _____ the paper then.

A. reading

B. read

C. readed

D. red

Answer: (A)

29. The correct form of reported speech of - She said him, "What did you say?"

A. She asked him what he said

B. She asked him what he had said

C. She asked him what he say

D. She asked him what did you say.

Answer: (B)

30. I said to him, "Who are you?"

A. I enquired of him who he was

B. I enquired who I was

C. I enquired him who was he

D. I enquired of him who I was

Answer: (A)

31. What is the function of using a quote (" ") around a search phrase?

A. Highlight keywords in results

B. Search for synonyms.

C. Search for an exact match of the phrase

D. Exclude the phrase from results

Answer: (C)

32. **Which of the following is a synchronous communication tool?**

A. Moodle Forum

B. Zoom Webinar

C. Email

D. LinkedIn Group

Answer: (B)

33. A company wants to create a permanent discussion space where employees can post suggestions anytime and HR can respond later. Which tool is MOST appropriate?

A. Zoom

B. Slack video call

C. Email thread

D. Discussion forum

Answer: (D)

34. Which of these tools supports both synchronous and asynchronous communication?

A. WhatsApp

B. Google Docs

C. Email

D. Forum

Answer: (A)

35. Why is using ALL CAPS in online communication discouraged?

A. It uses too much data

B. It is difficult to read

C. It is considered shouting or aggressive

D. It is informal

Answer: (C)

36. Which of the following is NOT an advantage of online communication?

A. Connects people across geographies

B. Cost savings on travel and logistics

C. Guarantees no misinterpretation of tone

D. Supports multimedia and collaboration

37. Posting confidential company data on social media without permission violates which principle of netiquette?

A. Respect for privacy

B. Respect for diversity

C. Avoiding spam

D. Using proper grammar

Answer: (A)

38. **What is a major challenge for students in rural areas when accessing digital resources?**

A. Too many books in the library

B. Poor internet connectivity and lack of devices

C. High cost of printing physical copies

D. Difficulty using shelves

Answer: (B)

39. **Which of the following is a popular online grammar-checking tool that also offers plagiarism detection?**

A. Canva

B. Grammarly

C. Photoshop

D. Trello

Answer: (B)

40. Which of the following best defines plagiarism?

A. Using open-access materials from the internet.

B. Using someone else's ideas or words without giving credit.

C. Writing your own ideas in your own words.

D. Quoting a source with proper citation.

Answer: (B)

41. Which of the following is NOT a benefit of mock interviews?

A. Boosting confidence

B. Receiving constructive feedback

C. Learning how to answer common interview questions

D. Ensuring you are hired by the company

Answer: (D)

42. A good mock interview should include:

A. Realistic interview questions

B. Feedback on verbal and non-verbal communication

C. Time management practice

D. All of the above

Answer: (D)

43. Telephone interviews are often used as:

A. The final stage of the hiring process

B. A casual conversation with HR

C. A screening step before face-to-face interviews

D. A group discussion replacement

Answer: (C)

44. In a formal job interview, which of the following greetings is most appropriate?

A. Hey, what's up?

B. Good morning, Sir/Madam.

C. Hi buddy!

D. Yo, how's it going?

Answer: (B)

45. For a fresher, the ideal length of a resume is:

A. 3–4 pages

B. 2–3 pages

C. 1 page

D. 5 pages

Answer: (C)

46. **Which of these is a common mistake in resume?**

A. Using action verbs

B. Tailoring a resume for each job

C. Including irrelevant details.

D. Highlighting measurable achievements

Answer: (C)

47. Primary requirements for an interview are

A. A good cover letter and updated Curriculum Vitae

B. wearing formal attire

C. knowledge about the company

D. all the above

48. Fill in the blank with the correct modal auxiliary verb: "You ---- wear a helmet while riding a bike."

A. may

B. must

C. could

D. might

Answer: (B)

49. Which modal auxiliary verb best fits the give sentence? "Employees ----- submit their reports before Friday."

A. should

B. may

C. might

D. can

Answer: (A)

50. Which of the following words belongs to technical vocabulary in engineering?

A. Algorithm

B. Happiness

C. Beautiful

D. Quickly

Answer: (A)

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Model Question Paper- I

CBCS SCHEME

First/ Second Semester B.E Degree Examination

Computer Aided Engineering Drawing (1BCEDx103)

(COMMON TO ALL BRANCHES)

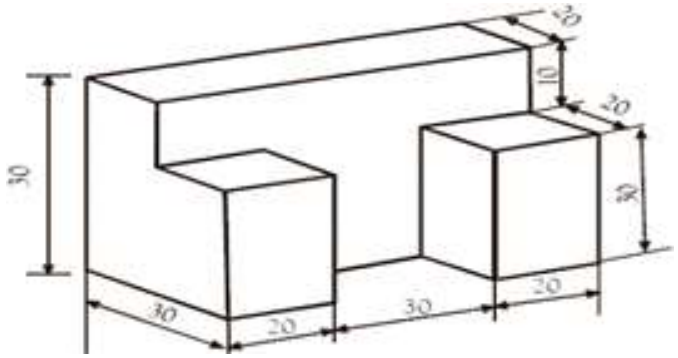
TIME: 03 Hours **Max. Marks: 100**

Notes:

1. *Answer any FOUR full questions, choosing at least ONE question from each MODULE*
2. *M: Marks, L: Bloom's level, C: Course outcomes.*

		Module - 1	M	L	C
Q. 1	a	A point 30 mm above XY line is the front view of two points A & B. The top view of A is 40 mm behind VP & the top view of B is 45 mm in front of VP. Draw the projections of the points & state the quadrants in which the points are situated.	8	3	1
	b	A line AB measuring 70 mm has its end A 15 mm in front of VP and 20 mm above HP and other end B is 60 mm in front of VP and 50 mm above HP. Draw the projections of the line and find the inclinations of the line with both the reference planes of the projections.	12	3	1
OR					
Q. 2	a	A hexagonal lamina of sides 25 mm rests on one of its corners on HP. The comer opposite to the corner on which it rests is 35 mm above HP and the diagonal passing through the corner on which it rests is inclined at 30° VP. Draw its projections. Find the inclination of the surface with HP.	20	3	1
Module – 2					
Q. 3	a	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 with the base of the pyramid nearer to observer.	30	3	1
OR					
Q. 4	a	A square prism 35 mm sides of base and 60 mm axis length rests on HP on one of its corners of the base. Draw the projections of the prism when the axis is inclined to HP at 45º and VP at 30°.	30	3	1
Module – 3					
Q. 5	a	Draw the development of the lateral surface of a funnel consisting of a cylinder and a frustum of a cone. The diameter of the cylinder is 20 mm and the top face diameter of the funnel is 80 mm. The height of the frustum and cylinder are equal to 60 mm and 40 mm respectively.	25	3	2
OR					
Q. 6	a	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° to HP and perpendicular to VP and is passing through a point on the axis at a distance of 50 mm from the base. Draw the development of the truncated portion of the solid.	25	3	2

Model Question Paper- I

Module – 4					
Q. 7	a	A rectangular pyramid of base 60 mm x 45 mm and height 50 mm is placed centrally on a rectangular slab of base 100 mm x 60 mm and thickness 20 mm. Draw the isometric view of the combination.	25	3	3
OR					
Q. 8	a	Draw all the three orthographic views of the object shown in the Fig. 1  Fig. 1	25	3	3