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BCS501

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Software Engineering and Project Management

Time: 3 hrs. Max. Marks: 100

		Module – 1	M	L	C
Q.1	a.	Explain software process and software engineering practices.	10	L2	CO1
	b.	Explain the waterfall model and incremental model, with diagram.	10	L2	CO1
		OR			
Q.2	a.	Explain Boehm Spiral process model with a neat diagram. Mention its	10	L2	CO1
		advantages and disadvantages.			
	b.	Explain the five activities of a generic process framework for software	10	L2	CO1
		engineering.			
		Module – 2			
Q.3	a.	Explain the distinct tasks of requirement engineering.	10	L2	CO2
	b.	Illustrate the UML use case diagram for safe home system.	10	L2	CO2
		OR			
Q.4	a.	Explain Class-Responsibility-Collaborator(CRC) modeling and data	10	L2	CO2
		modeling with an example.			
	b.	Explain the elements of analysis model in requirement modeling.	10	L2	CO2
	_	Module – 3			
Q.5	a.	Explain the principles of agile process development.	10	L2	CO3
	b.	Explain the following:	10	L2	CO3
		i) Adaptive software development			
		ii) SCRUM			
		OR			
Q.6	a.	Explain the concepts of extremes programming with a neat diagram.	10	L2	CO3
	b.	Explain design modeling principles that guide the respective framework	10	L2	CO3
		activity.			
	,	Module – 4	1		ı
Q.7	a.	Illustrate the project management life cycle with a neat diagram.	10	L2	CO4
	b.	Explain: i) Different ways of categorizing software projects	10	L2	CO4
	1	ii) Smart objectives			
	T	OR	ı		
Q.8	a.	Explain the difference between traditional versus modern project	10	L3	CO4
		management practices along with the role of management.			
	b.	Explain software development life cycle (ISO 12207) with a neat diagram.	10	L2	CO4
	1	Module – 5	1		ſ
Q.9	a.	Explain Quality Management System with principles of BS EN ISO-9001-	10	L2	CO5
	<u> </u>	2000.			
	b.	Explain the following:	10	L2	CO5
		i) McCall model ii) Garvin's Quality Dimensions.			
	1	OR	г -	_	<u> </u>
Q.10	a.	Describe six generic functions allowed in automated estimation techniques	10	L3	CO5
		of software projects.			
	b.	Explain COCOMO II model.	10	L2	CO ₅



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Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Software Engineering & Project Management

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 software process in software engineering highlighting the	10	L2	CO1
		importance of software engineering.			
	b.	Explain the five activities that a generic process framework for software	10	L2	CO1
		engineering encompasses.			
		OR			
Q.2	a.	Explain software myths with examples.	10	L2	CO1
	b.	Explain Incremental process models and evolutionary process models with	10	L2	CO1
		a neat diagram.			
		Module – 2	1		1
Q.3	a.	Explain the different tasks which requirements engineering encompasses.	10	L2	CO2
	b.	Explain the nature and characteristics of software system.	10	L2	CO ₂
_	1	OR			
Q.4	a.	Explain requirements elicitation and various techniques used in	10	L2	CO2
		requirements elicitation along with its importance.			
	b.	Illustrate an UML use case diagram for home security function.	10	L2	CO2
	1	Module – 3	T		
Q.5	a.	Explain Agile process and agility principles.	10	<u>L2</u>	CO3
	b.	Explain Extreme Programming (XP) with a neat diagram.	10	L2	CO ₃
	1	OR			
Q.6	a.	Explain SCRUM process with a neat diagram.	10	L2	CO3
	b.	Explain Agility with the cost of change with diagram. Explain the	10	L2	CO3
		principles of Agile software development.			
0.7		Module – 4	10	1.0	CO.4
Q.7	a.	Explain different categories of software projects with example.	10	L2	CO4
	b.	Compare between Project Management Life Cycle And Software	10	L2	CO4
		Development Life Cycle and its phases.			
0.0	0/	Explain the difference between traditional and modern project	10	L2	CO4
Q.8	a.	Explain the difference between traditional and modern project management.	10	LZ	CO4
-	b.	Explain the concepts in activity planning in software project management.	10	L2	CO4
	D.	Module – 5	10	LL	LU4
Q.9	a.	Explain place of software quality in project management.	10	L2	CO5
٧٠٠	b.	Explain in detail the techniques to enhance software quality.	10	L1	CO5
	υ.	OR	10	1/1	
Q.10	a.	Explain Quality Management Systems. With principles of BSENISO9001:	10	L2	CO5
V.10	a.	2000.	10		
	b.	Explain the techniques to enhance software quality and software reliability.	10	L2	CO5
		Explain SEICMM levels.	10	-J#	
L	1	1 =P ~ = + 0	L		



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Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Computer Networks

Time: 3 hrs. Max. Marks: 100

		Module – 1	M	L	C
Q.1	a.	What is data communication? List and explain characteristics and	06	L1	CO1
		components of communication model.			
	b.	Define switching. Explain Circuit Switched Network and Packet Switched	06	L2	CO1
		Network.	0.0		664
	c.	With neat sketch, explain different layers of TCP/IP protocol suite.	08	L2	CO1
		OP			
0.2	Τ_	OR	0.0	Т 1	CO1
Q.2	a. b.	What are guided transmission media? Explain twisted pair cable in detail.	06 08	L1 L1	CO1
	υ.	What is Virtual Circuit Network (VCN)? With neat diagram, explain three phases involved in VCN.	UO	LI	COI
	c.	Write a note on Encapsulation and decapsulation at Source Host for TCP/IP	06	L2	CO1
	۲.	protocol suite.	00	112	COI
		protocol suite.			
	<u> </u>	Module – 2		I.	
Q.3	a.	Define Redundancy. Explain CRC encoder and CRC decoder operation	08	L2	CO2
,		with block diagram.			
	b.	Distinguish between Flow Control and Error Control. Explain Stop and	08	L2	CO2
		Wait Protocol.			
	c.	List and explain Control Fields of I-frames, S-frames and U-frames.	04	L2	CO2
		OR	1	П	T
Q.4	a.	What is Hamming distance? With example, explain Parity Check Code.	06	L1	CO2
	b.	Define Framing. Explain character oriented framing and bit-oriented	06	L1	CO ₂
		framing.	0.0	T 0	COA
	c.	With flow diagram, explain CSMA/CA.	08	L2	CO ₂
		Module – 3			
0.5	Ta		10	L2	CO2
Q.5	a.	Explain virtual-circuit approach to route the packets in packet-switched network.	10	LZ	CO3
	b.	Illustrate the working of OSPF and BGP.	10	L3	CO3
	D.	Thustrate the working of OSFF and DGF.	10	LS	COS
	1	OR	<u> </u>	<u> </u>	
Q.6	a.	Explain IPv6 datagram format.	10	L2	CO3
¥.,	b.	Write an Dijikstra's algorithm to compute shortest path through graph.	06	L1	CO3
	c.	Write a note on Routing Information Protocol (RIP) algorithm.	04	L2	CO3
		Module – 4	•		
Q.7	a.	Explain Go-Back-N protocol working.	10	L2	CO4
	b.	With neat sketch, explain three-way handshaking of TCP connection	10	L2	CO4
		establishment.			
		1 of 2			

Q.8				BC	CS502
<u> </u>		OR			
Ų.o	a.	With an outline, explain selective repeat protocol.	10	L2	CO4
	b.	List and explain various services provided by User Datagram Protocol	10	L2	CO4
		(UDP).			
Q.9	a	Module – 5 Briefly explain Secure Shell (SSH).	10	L2	CO4
Ų.Ÿ	a. b.	Write a note on Request message and response message formats of HTTP.	10	L2	CO4
	Ŋ.	Time a note on request message and response message formats of 111 1F.	10	114	004
	1	OR	1	1	I
Q.10	a.	With neat diagram, explain the basic model of FTP.	04	L2	CO4
	b.	Describe the architecture of electronic mail (e-mail).	06	L3	CO4
_	c.	Briefly explain Recursive Resolution and Iterative Resolution in DNS.	10	L2	CO4



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Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Computer Networks

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 Data Communications. Explain the characteristics and components	10	L2	CO1
		of Data communication with neat diagram.			
	b.	With neat diagram explain the Layers in the TCP /IP protocol suite.	10	L2	CO1
		OR			
Q.2	a.	Explain in detail the guided and unguided Media transmission with suitable	12	L2	CO1
		diagram.			
	b.	Describe the working of Datagram network with suitable sketches	08	L2	CO1
		Module – 2	1		Ī
Q.3	a.	With a neat sketch describe the working of simple protocol of Data Link	12	L2	CO ₂
		Layer. Develop a program to implement a sliding window protocol in the			
		data link layer.			
	b.	Illustrate the stop and wait protocol of DLL with an example.	08	L2	CO ₂
		OR	I . I		
Q.4	a.	Solve:	12	L3	CO ₂
		i) In parity check if the dataword is 1011. What is the code word? What			
		happens at receiver, if the receive word is a) 10011 b) 10110 c)01011			
		ii) Generate CRC for the dataword $x^3 + 1$ and the generator $x^3 + x + 1$.			
		What happens if the received word is 1000110. iii) Generate checksum of list of five 4-bit number (7,11,12,0,6) and verify			
		the same at receiver.			
	b.	Illustrate the working of CSMA/CA with a flow diagram	08	L2	CO2
	D.	Module – 3	UO	LL	COZ
Q.5	a.	Summarize the packet format of IPV6 datagram with suitable diagram.	10	L2	CO2
ν.υ	b.	Develop an algorithm for Distance Vector Routing and explain the same.	10	L2	CO4
		OR			
Q.6	a.	Explain MOSPF with an example and suitable diagram.	10	L3	CO4
	b.	Develop algorithm for Link state Routing and explain the same.	10	L2	CO4
		Module – 4			
Q.7	a.	Illustrate the working of Go-back-N protocol with an example	12	L2	CO4
	b.	Explain connectionless aand connection oriented services in Transport	08	L2	CO2
		layer.			
		OR			
Q.8	a.	Illustrate the connection establishment and termination in TCP/IP with	12	L2	CO3
		suitable sketches.			
	b.	With sketch of TCP segment format, describe its field.	08	L2	CO ₃
		Module – 5	1		
Q.9	a.	Explain FTP and its two connections.	10	L2	CO3
	b.	Explain SMTP with diagram and the mail transfer phases.	10	L2	CO3
		OR	1		
Q.10	a.	Explain MIME and its header.	10	L2	CO3
	b.	Explain SSH and its components with neat diagram.	10	L2	CO ₃



Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Theory of Computation

Time: 3 hrs. Max. Marks: 100

 Q.1 a. Define the following with example: i) Language ii) String iii) Power of an alphabet. b. Define DFA. Draw a DFA to accepts. i) The set of all strings that contain a substring aba. ii) To accept the stings of a's and b's that contain not more than there b's. iii) L = {w ∈ {a, b}' : No 2 consecutive characters are same in w}. c. Convert the following NFA to DFA. 7 L2 Converting the following with example: i) Alphabet ii) Alphabet iii) Reversal of string iii) Concatenation of Languages. b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's, followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2			Module – 1	M	L	C
i) Language ii) String iii) Power of an alphabet. b. Define DFA. Draw a DFA to accepts. i) The set of all strings that contain a substring aba. ii) To accept the stings of a's and b's that contain not more than there b's. iii) L = {w ∈ {a, b}} : No 2 consecutive characters are same in w}. c. Convert the following NFA to DFA. 7 L2 Convert the following NFA to DFA. OR Q.2 a. Define the following with example: i) Alphabet ii) Reversal of string iii) Concatenation of Languages. b. Design a DFA for the Language : L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's, followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA.	0.1	a.				CO1
b. Define DFA. Draw a DFA to accepts. i) The set of all strings that contain a substring aba. ii) To accept the stings of a's and b's that contain not more than there b's. iii) L = {w ∈ {a, b}* : No 2 consecutive characters are same in w}. c. Convert the following NFA to DFA. 7 L2 Convert the following NFA to DFA. OR Q.2 a. Define the following with example: i) Alphabet ii) Reversal of string iii) Concatenation of Languages. b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's, followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2	Q.12					
i) The set of all strings that contain a substring aba. ii) To accept the stings of a's and b's that contain not more than there b's. iii) L = {w ∈ {a, b}* : No 2 consecutive characters are same in w}. c. Convert the following NFA to DFA. 7 L2 Convert the following NFA to DFA. 7 L2 Convert the following NFA to DFA. 8						
ii) To accept the stings of a's and b's that contain not more than there b's. iii) $L = \{w \in \{a, b\}^* : \text{No 2 consecutive characters are same in w}\}$. c. Convert the following NFA to DFA. $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		b.	Define DFA. Draw a DFA to accepts.	10	L3	CO1
iii) L = {w ∈ {a, b}* : No 2 consecutive characters are same in w}. c. Convert the following NFA to DFA. 7 L2 Converting the following with example: a. Define the following with example: b. Design a DFA for the Language: b. Design a DFA for the Language: c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's, followed by 0 or more C's. Also converted the following with example: b. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more C's. Also conver			i) The set of all strings that contain a substring aba.			
c. Convert the following NFA to DFA. O 1 p {p, q} {p} {p} {q {r}			ii) To accept the stings of a's and b's that contain not more than there b's.			
O 1 P {p, q} {p} {q {r} {r			iii) $L = \{w \in \{a, b\}^* : \text{No 2 consecutive characters are same in } w\}.$			
Define the following with example: OR OR						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		c.	Convert the following NFA to DFA.	7	L2	CO1
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			$\rightarrow p \mid \{p,q\} \mid \{p\}$			
The state of						
OR Q.2 a. Define the following with example:						
 Q.2 a. Define the following with example: i) Alphabet ii) Reversal of string iii) Concatenation of Languages. b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. C. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2 			* S {S} {S}			
 Q.2 a. Define the following with example: i) Alphabet ii) Reversal of string iii) Concatenation of Languages. b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. C. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2 						
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 ii) Reversal of string iii) Concatenation of Languages. b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2	Q.2	a.		3	L1	CO1
 iii) Concatenation of Languages. b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2						
 b. Design a DFA for the Language: L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. 						
L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2			111) Concatenation of Languages.			
L = {w ∈ {0, 1}* : w is a string divisible by 5}. c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module - 2		h	Design a DEA for the Language	7	12	CO1
c. Define NFA. Obtain an ε - NFA which accepts strings consisting of 0 or more a's, followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module – 2		р.		/	L3	COI
more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module – 2			$L = \{w \in \{0, 1\}^+ : w \text{ is a string divisible by } 3\}.$			
more a's , followed by 0 or more b's followed by 0 or more C's. Also convert it to DFA. Module – 2		c	Define NEA Obtain an a NEA which accounts strings consisting of 0 or	10	12	CO1
convert it to DFA. Module – 2		7.		10	LL	COI
Module – 2	4	1				
			convert it to B111.			
			Module – 2	1	<u> </u>	ı
	Q.3	a.		10	L2	CO2
languages :						
i) Strings of a's and b's starting with a and ending with b.						
ii) Set of strings that consists of alternating 0's and 1's.						
iii) $L = \{a^n \text{ bm }, (n+m) \text{ is even}\}.$			iii) $L = \{a^n \text{ bm }, (n+m) \text{ is even}\}.$			
iv) $L = \{w : / w / \text{mod } 3 = 0 \text{ , where } w \in \{a, b\}^*\}.$			iv) $L = \{w : / w / \text{mod } 3 = 0 \text{, where } w \in \{a, b\}^*\}.$			
1 of 2						

	b.	Minimize the following finite automata using Table filling algorithm:	10	L2	CO2
		$\delta \mid a \mid h$			002
		$\rightarrow A B A$			
		B A C			
		$C \mid D \mid B$			
		* D D A			
		E D F			
		F G E			
		$G \mid F \mid G$			
		$H \mid G \mid D$			
		OR			
Q.4	a.	Construct ε - NFA for the following Regular expression :	6	L1	CO2
		i) $(0+1) \ 0 \ 1(1+0)$ ii) $1(0+1)^* \ 0$ iii) $(0+1)^* \ 0 \ 1 \ 1^*$			
	h	Obtain the Degular expression that denotes the language accented by	(L3	CO2
	b.	Obtain the Regular expression that denotes the language accepted by Fig. Q4(b).	6	L3	COZ
		11g. Q+(0).			
		Fig. Q4(b)			
		Using Kleene's theorem.			
	c.	State the Pumping Lemma for the Regular Languages. And also prove that	8	L1	CO2
		the following languages are note regular.			
		i) $L = \{0^n \ 1^m \mid n \le m\}$ ii) $L = \{0^n \ 1^m \ 2^n \mid n, m \ge 1\}$.			
	<u> </u>	Module – 3			
Q.5	a.	Design CFG for the following languages:	10	L3	CO3
		$ \begin{array}{ll} i) & L = \{a^n \ b^{n+3} \ , \ n \geq 0\} \\ ii) & L = \{a^i \ b^j \ c^k \ , \ j = i+k \ , \ i \geq 0 \ , \ k \geq 0\} \\ \end{array} $			
		ii) $L = \{a^i b^j c^k, j = i + k, i \ge 0, k \ge 0\}$			
		iii) $L = \{w / / w / \text{ mod } 3 > 0 \text{ where } w \in \{a\}^*\}$			
		iv) $L = \{a^m b^n / m \neq n\}$			
		v) Palinderomes over 0 and 1.			
	b.	Consider the grammar G with productions.	10	L2	CO3
	1	$S \rightarrow AbB/A/B$; $A \rightarrow aA/\epsilon$; $B \rightarrow aB/bB/\epsilon$.			
	1	Obtain LMD, RMD and parse tree for the string aaabab.			
		Is the given grammar ambiguous?			
		OR			
Q.6	a.	Define the following with example:	4	L1	CO3
		i) Context free grammar ii) Left most Derivation			
		iii) Parse tree iv) Ambiguous grammar.			
	b.	Design PDA for the language:	10	L3	CO3
		$L = \{a^i b^j c^k / i + k = j, i \ge 0, k \ge 0\}$ and show the moves made by the PDA			
		for the string aabbbc.			

	c.	Convert the following CFG's to PDA: $S \rightarrow a A$; $A \rightarrow a ABC/bB/a$; $B \rightarrow b$; $C \rightarrow c$.	6	L2	CO3
		Module – 4			
Q.7	a.	Define CNF. Convert the following CFG to CNF $E \rightarrow E + T / T$ $T \rightarrow T * F / F$ $F \rightarrow (E) / I$ $I \rightarrow Ia / Ib / a / b$	10	L2	CO4
	b.	Show that $L = \{0^n \ 1^n \ 2n \ / \ n \ge 1\}$ is no context free.	4	L2	CO4
	c.	Prove that the family of context free languages is closed under union and concatenation.	6	L1	CO4
		OR			
Q.8	a.	Define Greibach Normal Form. Convert the following CFG to GNF. $S \rightarrow AB$; $A \rightarrow aA/bB/b$; $B \rightarrow b$.	6	L2	CO4
	b.	Consider the following CFG: S → ABC / BaB A → aA / BaC / aaa B → bBb / a / D C → CA / AC D → ε i) What are useless symbols? ii) Eliminate ε - productions, Unit productions and useless symbols from the grammar.	10	L3	CO4
	c.	Prove that the following languages are not context free. i) $L = \{ai / i \text{ is prime}\}$ ii) $L = \{a^{n^2} / n \ge 1\}$.	4	L2	CO3
		Module – 5		1	1
Q.9	a.	Define a turing machine and explain with neat diagram, the working of a basic turing machine.	6	L1	CO4
4	b.	Design a Turing machine to accept the language, $L = \{a^n \ b^n \ c^n / n \ge 1\}$. Draw the transition diagram and show the moves for the string aabbcc.	14	L4	CO4
0.10	1	OR	1.0	T 4	00.
Q.10	a.	Design a Turing machine to accept palindrome over {a, b} and draw the transition diagram.	12	L4	CO5
	b.	Write a short notes on : i) Recursively Enumerable Language. ii) Multitape Turing Machine.	8	L1	CO5



BCS5

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Theory of Computation

Time: 3 hrs. Max. Marks: 100

		Module – 1	M	L	C
Q.1	a.	Define the following with an example:	5	L1	CO1
		i) Alphabet			
		ii) Power of an alphabet iii) String			
		iii) String iv) String concatenation			
		v) Language			
		The state of the s			
	b.	Define Deterministic Finite Automata (DFA) and the language accepted by	5	L1	CO1
		it.			
		Desire DEA 44 Sent the fellowing laws	10	1.2	CO1
	c.	Design DFA to accept the following languages: i) $L = \{W \in \{0, 1\}^* : W \text{ has } 001 \text{ as a substring}\}$	10	L3	CO1
		ii) $L = \{W \in \{0, 1\}^* : W \mod 3 = 0\}$			
		II) L (We (0, 1) . W mod 3 V)			
		OR			
Q.2	a.	Convert the following NFA to DFA	8	L2	CO1
		$\mathcal{L}_{0,1}$			
		$\rightarrow (9)$ (9) (9)			
		Fig.Q.2(a)			
		1 ig.Q.2(a)			
	b.	Convert the following ∈ - NFA to DFA	12	L2	CO1
		Ca Cb CC			
		ϵ			
	1	7(41) 7(41)			
	1				
		Fig.Q.2(b)			
		and define ∈ - NFA			
		Module 2			
Q.3	a.	Module – 2 Define regular expression. Write the regular expression for the following	10	L2	CO2
Q.5	a.	languages:	10		002
		i) Representing for strings of a and b's having odd length.			
		ii) To accept 10 as substring over an alphabet $\Sigma = \{0, 1\}$			
			-		
	b.	State and prove pumping Lemma for regular languages.	10	L2	CO2
		1 - 52			
		1 of 3			

				BC	CS503
		OR			
Q.4	a.	Prove that regular languages are closed under complementation and intersection.	10	L2	CO2
	b.	 i) Obtain NFA (Non deterministic finite automata) for the regular expression (a + b)* abb. ii) Obtain NFA for the regular expression (a* + ab) (a + b)* 	6	L2	CO2
	c.	Write the applications of regular expression.	4	L2	CO2
	•	Module – 3			•
Q.5	a.	Define context free grammar. Write the CFG for the following languages: i) $L = \left\{ a^n b^n c^m : \substack{n \geq 0 \\ m >= 0} \right\}$ ii) $L = \left\{ w \in \left\{ a, b \right\}^* : n_a(w) = n_b(w) \right\}$	10	L2	CO2
	b.	 i) Define ambigious grammar with suitable example. ii) Consider the grammar E → + EE / * EE / - EE / x / y Find the left most derivation, right most derivation and parse tree for the string "+* -xyxy". OR	10	L2	CO2
0.6	1		10	т 2	CO2
Q.6	а.	Define PDA (Push Down Automata). Design a PDA to accept the following language: $L = \{a^nb^n : n \ge 0\}.$ Draw the transition diagram and show that instantaneous description for the string aaabbb.	10	L3	CO3
	b.	Convert the following CFG to PDA: i) $E \rightarrow E + E \mid E * E \mid id$ ii) $E \rightarrow I \mid E * E \mid (E)$ $I \rightarrow id$	6	L2	CO3
4	c.	Discuss the language accepted by PDA.	4	L1	CO3
		Module – 4			1
Q.7	a.	Convert the following grammar to CNF (Chomsky Normal Form) $S \rightarrow ASB / \in A \rightarrow aAS / a$ $B \rightarrow SbS A bb$ and define CNF	10	L2	CO3
	1.	State and mayor manifest and for the first first	10	1.2	CO2
	b.	State and prove pumping Lemma for context free languages. 2 of 3	10	L2	CO3

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	В										
Q.8	a.		10	L3	CO						
	b.	Prove that the family of context free languages is closed under union concatenation and star closure.	10	L2	CC						
Q.9	a.	Module – 5 Define a Turing Machine. Explain the working and variants of Turing machine.	10	L1	CO						
	b.	Design a Turing machine to accept $L = \{a^n b^n c^n n \ge 0\}$. Draw the transition	10	L3	CC						
	.	diagram. Show the moves mode for string aabbcc.	10	Lo							
	<u> </u>	OR									
Q.10	a.	Explain language acceptability and design of Turing Machines (Steps).	10	L2	CC						
	b.	Explain the following: i) Programming techniques for turing machines ii) Undecidability problem.	10	L2	CO						
4	1	3 of 3									



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Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 **UNIX System Programming**

Time: 3 hrs. Max. Marks: 100

neat diagram.			Module – 1	M	L	C
b. Explain the following UNIX commands with syntax and examples: 10 1.2 CO	Q.1	a.	Explain the Kernel and Shell relationship in UNIX operating system with a	10	L1	CO1
i) who ii) ls iii) passwd iv) echo v) date OR			neat diagram.			
Q.2 a. Explain any five file related commands with syntax and example of each. 10		b.	Explain the following UNIX commands with syntax and examples:	10	L2	CO1
Q.2 a. Explain any five file related commands with syntax and example of each. 10 1.2 CO b. Explain the salient features of UNIX operating system. 04 L1 CO c. Explain the file types or eategories. 06 1.2 CO The syntam of the salient features of UNIX operating system. 04 L1 CO c. Explain the file types or eategories. Module – 2 Q.3 a. Explain the use of chmod command to change file permission using both absolute and relative methods. 10 L2 CO b. Explain is commands with all the options and examples. 10 L2 CO The syntam of the steps of shell interpretive cycle. 04 L2 CO c. Explain three standard files in UNIX. 06 L2 CO c. Explain the steps of shell interpretive cycle. 04 L2 CO D. Develop a C program to demonstrate the use of open() and read() system 10 L3 CO c. Explain the use of mkdir() and mrdir() function in managing directories. 06 L2 CO D. Develop a c program to demonstrate the chdir() and fehdir() functions in 10 L3 CO D. Develop a c program to demonstrate the chdir() and fehdir() functions in 10 L3 CO D. Develop a c program to demonstrate the chdir() and fehdir() functions in 10 L3 CO D. Develop a c program to demonstrate the chdir() and fehdir() functions in 10 L3 CO D. Develop a c program to demonstrate the chdir() and fehdir() functions in 10 L3 CO D. Explain the memory layout of a C program in UNIX. 04 L2 CO D. Explain pipes and its limitations upon developing a program to send data 10 L2 CO D. Explain pipes and its limitations upon developing a program to send data 10 L2 CO D. Explain pipes and its limitations upon developing a program to send data 10 L2 CO D. Explain pipes and its limitations upon developing a program to send data 10 L2 CO D. Explain pipes and its limitations upon developing program to send data 10 L2 CO D. Explain Daemon process by developing program to t			i) who ii) ls iii) passwd iv) echo v) date			
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Q.8 a. Explain pipes and its limitations upon developing a program to send data from parent to child over a pipe. b. Explain the client server communication using FIFO with a neat diagram. Module – 5 Q.9 a. Illustrate signal in UNIX and develop program to setup signal handlers for sigsetsmp() and abort(). b. Explain Daemon process by developing program to transform a normal user into a Daemon process. OR Q.10 a. Explain implement SIGPROCMASK and SIGCONGJMP functions with examples. b. Explain coding rules and error logging for Daemon process with neat diagram.		b.		10	L2	CO4
Q.8 a. Explain pipes and its limitations upon developing a program to send data 10 L2 CO4 from parent to child over a pipe. b. Explain the client server communication using FIFO with a neat diagram. 10 L2 CO4						
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Module – 5 Q.9 a. Illustrate signal in UNIX and develop program to setup signal handlers for sigsetsmp() and abort(). b. Explain Daemon process by developing program to transform a normal user into a Daemon process. OR Q.10 a. Explain implement SIGPROCMASK and SIGCONGJMP functions with examples. b. Explain coding rules and error logging for Daemon process with neat diagram.						
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b. Explain Daemon process by developing program to transform a normal user into a Daemon process. OR Q.10 a. Explain implement SIGPROCMASK and SIGCONGJMP functions with examples. b. Explain coding rules and error logging for Daemon process with neat diagram. 10 L2 CO3	Q.9	a.		10	L3	CO5
into a Daemon process. OR Q.10 a. Explain implement SIGPROCMASK and SIGCONGJMP functions with 10 L2 COsexamples. b. Explain coding rules and error logging for Daemon process with neat diagram.						
OR Q.10 a. Explain implement SIGPROCMASK and SIGCONGJMP functions with examples. b. Explain coding rules and error logging for Daemon process with neat diagram. 10 L2 CO3		b.		10	L3	CO5
 Q.10 a. Explain implement SIGPROCMASK and SIGCONGJMP functions with examples. b. Explain coding rules and error logging for Daemon process with neat diagram. 			<u> </u>			
examples. b. Explain coding rules and error logging for Daemon process with neat diagram. 10 L2 CO3		1		1		T
b. Explain coding rules and error logging for Daemon process with neat diagram.	Q.10	a.		10	L2	CO5
diagram.			1			
		b.		10	L2	CO5
als als als als als			diagram. ****			



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BCS515C

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Unix System Programming

Time: 3 hrs. Max. Marks: 100

		Module – 1	M	L	C
Q.1	a.	Explain Unix Architecture with neat diagram.	08	L2	CO1
	b.	List and explain the salient features of Unix Operating System	06	L1	CO1
	c.	Explain the following commands with suitable example.	06	L2	CO1
		i) echo ii) ls iii) who iv) date v) cal vi) printf			
		OR			
Q.2	a.	Define file. Explain three categories of unix files system.	04	L1	CO1
	b.	Write a short note on:	06	L2	CO ₁
		i) Parent – child relationship			
		ii) Absolute and relative pathname			
	c.	Explain the following file related command with appropriate syntax,	10	L2	CO ₁
		options and example			
		i) cat ii) Mr iii)rm iv) cp v) wc			
	_	Module – 2	ı		T
Q.3	a.	Briefly explain the listing of file attribute with ls – l command	10	L2	CO2
	b.	Explain briefly the chmod with respect to relative permission and absolute	10	L2	CO2
		permission with example.			
	1	OR	ı	1	
Q.4	a.	With help of a example, explain grep command and the options supported	10	L3	CO2
		for searching a pattern.			
	b.	Explain shell interpretive life cycle	02	L2	CO2
	c.	Explain if, while, for and case control statement in shell scripts with	08	L2	CO2
		suitable program.			
	1	Module - 3 2	ı		
Q.5	a. '	Explain the general file control functions o2pen (), Read (), create (c)	10	L2	CO ₃
	-	write () and close () with syntax, examples.			~~-
	b.	With neat diagram, explain memory layout of C program	10	L2	CO ₃
	1	OR	4.0		
Q.6	a.	Explain setjmp and longjmp, getrlimit and setrlimit with examples	10	L2	CO3
	b.	Explain chdir, fchdir and getcwd functions with an example C program	10	L2	CO ₃
	1	Module – 4	4.0		
Q.7	a.	Describe how the process is created using fork () and v fork () with	10	L3	CO4
	1_	suitable C program example.	4.0		
	b.	What is race condition? Explain in detail with example how to overcome	10	L2	CO4
		race condition.			
	1	1.00			
		1 of 2			

Q.8		OR]	BCS	515C
C	a.	Define pipes. Write a program to send data from parent to child using pipe API and also list its limitations.	10	L2	CO4
	b.	What is FIFO ? With a neat diagram explain client server communication using FIFO.	10	L1	CO4
		Module – 5			l
Q.9	a.	Define signal. List the actions taken by process when the signal is raised. Explain signal API's Signal (), Sigset() Sigaction ()	10	L2	CO5
	b.	What is error logging? With a neat block diagram discuss the error login facility in BSD.	10	L2	CO5
	<u> </u>	OR			
Q.10	a.	What are Daemon process? Explain daemon characteristics and coding Rules.	10	L2	CO5
	b.	Explain the Sigsetjmp and siglagjmp function with example.	10	L2	CO5
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Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Research Methodology and IPR

Time: 3 hrs. Max. Marks: 100

		Module – 1	M	L	C
Q.1	a.	Identify the meaning of Research and brief out the objective and motivation in engineering research.	10	L1	CO1
	b.	Explain brief about research cycle and verify with the research flow diagram.	10	L1	CO1
		OR			
Q.2	a.	Identify the types of engineering research and briefly explain them.	10	L1	CO1
	b.	Explain about the different types of research misconduct.	10	L1	CO1
		Module – 2			
Q.3	a.	Explain about the importance of literature review and technical reading.	10	L2	CO2
	b.	Mention the various benefits of bibliographic databases.	10	L1	CO2
		OR			
Q.4	a.	Indentify the impact of technical reaction and brief about it.	10	L1	CO2
	b.	Enumerate the impact of title and keywords on citation with example.	10	L2	CO2
		Module – 3		ı	,
Q.5	a.	Define Intellectual properties and explain about its types.	10	L1	CO3
	b.	Explain about the key aspect of patent law.	10	L2	CO3
		OR		l	l
Q.6	a.	Explain about the assessment of novelty.	10	L1	CO3
	b.	Brief about the patent procedure in India.	10	L1	CO4
		Module – 4			•
Q.7	a.	Mention and brief about the justification for copyright law.	10	L2	CO4
	b.	Explain about the basic concepts of under lying copyright law.	10	L1	CO4
	1	OR			1
Q.8	a.	Brief about the various representations of sound recordings.	10	L2	CO5
	b.	Explain about TRIPS agreement in detail.	10	L1	CO5
		I .		l	1

Q.9	a.	Module – 5 Explain about the justification of protection designs.	10	L2	CO5
	b.	Brief about the excluded subjected matter in the context of design protection.	10	L1	CO5
Q.10	a.	What are the rights of the owner of designs? Explain.	10	L1	CO5
	b.	Brief about the Assignment of Design Rights.	10	L1	CO5
	υ.		10	1.1	003

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Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 Research Methodology and IPR

Time: 3 hrs. Max. Marks: 100

		Module – 1	M	L	C
Q.1	a.	Define the term research and explain the research flow cycle with a relevant diagram.	10	L1	CO1
	b.	What are the key ethical issues related to authorship? Explain any one.	10	L2	CO1
	1	OR	ı	1	
Q.2	a.	Define Engineering research and list its aims and objectives.	10	L1	CO1
	b.	Write a note on the following research misconduct: i) Plagiarism ii) Other types of research bias.	10	L2	CO1
		Module – 2			
Q.3	a.	What are the primary goals of conducting a literature review in academic research?	10	L2	CO2
	b.	Explain various steps involved in critical and creative reading.	10	L2	CO2
		OR			
Q.4	a.	How does new and existing knowledge can contribute to the research process? Explain relevant points.	10	L3	CO2
	b.	Explain Knowledge flow through citation.	10	L2	CO2
		Module – 3			
Q.5	a.	What inventions are eligible for patenting and which matters are considered non – patentable?	10	L2	CO3
	b.	Explain classes of copyrights.	10	L1	CO3
		OR *			
Q.6	a.	Define the term patent and what conditions must be met for obtaining patent protection.	10	L2	CO3
	b.	Explain the following major steps involved in the process of patent registration: i) Prior Art search ii) Choice of application to be filed iii) Pre-grant opposition.	10	L2	CO3
		Module – 4	I.	l	<u> </u>
Q.7	a.	Using flow chart, explain the important steps involved in the process of copyrights registration.	10	L2	CO4
			1		

	b.	What are the different categories trademarks recognized under Indian law and tabulate the famous trademark types with examples.	10	L3	CO4
Q.8	a.	What are the roles and functions of the copyright board and copyright society in administering copyright law and regulations?	10	L3	CO4
	b.	Using a flow chart, explain the steps involved in the process of trademarks registration.	10	L2	CO4
		Module – 5	1	1	1
Q.9	a.	Discuss the design registration procedure using a flow chart.	10	L2	CO5
	b.	Define Geographical Indications (GI) with an example. What are the rights granted to GI holders.	10	L2	CO5
		OR		1	
Q.10	a.	Using a flowchart, explain the process of GI registration.	10	L2	CO5
	b.	Explain the classification of Industrial Designs and design registration, trends in India.	10	L2	CO5
A		2 of 2			

CBCS SCHEME

USN						Question Paper Version: A

	tth Semester B.E./B. Tech. Degree Examination, Dec.2024/Jan.2025 Environmental Studies and E – Waste Management
Гіте	e: 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.
1.	Which of the following conceptual spheres of the environment is having the least storage capacity for matter? a) Atmosphere b) Lithosphere c) Hydrosphere d) Biosphere
2.	The ratio between energy flows at different points in a food chain is known as a) Ecological capacity b) Ecological efficiency c) Ecological assimilation d) Ecological potential
3.	A predator is a) An animal that is fed upon another animal b) Animal that feeds upon both plants and animals c) An animal that feeds upon another animal d) A primary consumer
4.	 Why Rann of Kutch attracts aquatic birds in monsoon season? a) Because desert land is converted to forest land b) Because desert land is converted to snow c) Because desert land do not convert d) Because desert land is converted to salt marshes
5.	Which kind of soil we can find on the surface of Thar desert? a) Rocky b) Moist c) Fertile d) Aeolian
6.	Which of the following type of forest important for watersheds? a) Tropical Evergreen forests b) Tropical Deciduous forests c) Tropical Montana forests d) Grassland forest

7.	Hot spots areas have				
	a) Low density of biodiversity	b)	Only endangered	plan	ts
	c) High density of hot springs	d)	High density of bi	odiv	ersity
	, , , , , , , , , , , , , , , , , , , ,				3
8.	Sustainable Development means		VY		
	a) meeting present needs without comprom	nisin	g on future needs		
	b) progress of human beings			. (1
	c) balance between human needs and the al	bility	y of earth to provide	the	resources
	d) all of these				
9.	The term Alpha diversity refers to		1		
	a) Genetic diversity		Community and ec	osys	tem diversity
	c) Species diversity within a community or	eco	system		
	d) Diversity among the plant				
10					
10.	Algae, green plants and photosynthetic bac			1\	C
	a) Autotrophic b) Heterotrophic	c)	Decomposers	d)	Consumers
11.	Veld type grasslands are located at				
11.	a) South Africa b) South America	c)	Australia	d)	Britain
	a) South Times of South Timested	υ,	rustrunu	u)	Dittum
12.	Which pyramid is always upright?				
	a) Energy b) Biomass	c)	Numbers	d)	Food chain
13.	In what form is solar energy is radiated from				
	a) Ultraviolet Radiation		Infrared Radiation	1	
	c) Electromagnetic waves	d)	Transverse waves		
1.1	What does MID stands for in the energy fi	-149			
14.	What does MHD stands for in the energy fie a) Magneto Hydro Dynamic		Metal Hydrogen D	otox	7
	c) Micro Hybrid Drive	b) d)	Metering Head Dif		
	c) where tryona Drive	u)	Metering Head Di	ileie	iitiai
15.	The 'Miracle Material' that can turn CO ₂ in	to li	auid fuel is :		
	a) Propane b) Copper		Graphene	d)	Potassium
		- /		/	
16.	A tide whose difference between high and le	ow 1	tide is greatest.		
	a) Diurnal tide b) Neap tide	(c)	Spring tide	d)	Ebb tide
		11			
17.	Which of the turbine can be mounted vertic	-	_	1\	
	a) Pelton wheel b) Kaplan turbine	c)	Gorlov turbine	d)	Francis turbine
18.	Which type of fuel is removed from the	read	ctor core after reac	hina	end of core life
10.	service?	TCa	ctor core after reac	1111112	, cha of core in
	a) Burnt fuel b) Spent fuel	c)	Engine oil	4)	Radioactive fuel
	a) Burnt luci b) Spent luci	C)	Linginic on	u)	Radioactive fuel
19.	What is a fuel cell?				
	a) Converts heat energy to chemical energy	y			
	b) Converts heat energy to electrical energ	-			
	c) Converts chemical energy to electrical e	-	gy		
	d) Converts kinetic energy to heat energy				
	a) Converts kinetic energy to near energy				

20.	Which one of the following is the apex pollution control?	org	anization in our country	in the field of
	a) Water Pollution Control Board	b)	State Pollution Control E	Board
	c) Central Pollution Control Board	d)	Air Pollution Control Bo	oard
21		٠, ٨		
21.	is caused by drinking water high in n	_	*	
	a) Cholera		Kidney problem Methomoglobinomia	
	c) Liver problem	(u)	Methomoglobinemia	
22.	Bhopal gas tragedy took place in the year		and the gas responsible wa	as
	a) 1964, Hydrogen fluoride		1974, Methyl chloride	
	c) 1984, methyl ISO – cyanide	d)	1994, Methyl sulphate	
22		. :	1	
23.	The major chemical pollutants in photochen		<u> </u>	ANI
	a) NO, NO ₂ , VOC, O ₃ , PAN		N ₂ O , NO ₂ , VOC, O ₃ , F NO, N ₂ O ₅ , VOC, O ₃ , P	
	c) NO, NO ₂ , VOC, O ₂ , PAN	u)	NO, N_2O_5, VOC, O_3, P	AIN
24.	The international protocol to protect the Ozo	one	layer is	
	a) Vienna protocol		Kyoto protocol	
	c) Cartagena protocol	d)	Montreal protocol	
25.	Which is the best and the worst method of p			ispersion?
	a) Lofting and fumigation		Trapping and fanning	
	c) Conning and fumigation	d)	Fanning and Lofting	
26.	What is called for a Temporary hearing loss	9		
-0.	a) Temporary ear pain	b)	Temporary hearing prob	olem
	c) Temporary threshold shift		Temporary hearing shift	
27.	What timings loud speakers shouldn't use in	ı pu		
	a) 10.00 pm to 5.00 am	b)	11.00 pm to 6.00 am	
	c) 1.00 am to 7.00 am	d)	10.00 pm to 6.00 am	
28.	In which section, if a person violates the no	ise	nollution regulations is l	iable for nenalty
20.	according to Environmental Protection Act,			nuole for penalty
	a) Section 12 b) Section 15			Section 19
		Ĉ١	.,	
29.				
	a) Lead b) Arsenic	(c)	Mercury d) C	Cadmium
30.	The process of reducing the fluoride content	t fro	m water is called as	
30.	a) Chlorination		Fluoridation	
	c) Defluoridation	d)	Fanning and Lofting	
	c, Deliuoridation	u)	i anning and Loiting	
31.	What is the Dissolved oxygen value required	d fo	r the survival of aquatic sp	pecies?
	a) 7 mg/L b) 8.2 mg/L			· mg/L
22	WILL 41 CH 14 1	,1	. 11 . 1	· 0
32.	Which among the following is used to dump a) Land fills b) Ocean			
	at Land hils D) Ucean	C1	κ iver (1) ρ	All of these

33.	Which type of waste includes items such as a) Hazardous waste c) Bio – medical waste	leftover food, fruit peels and yard trimming b) Organic waste d) Electronic waste	,s?
34.	Which of the integrated waste management a) Source Reduction b) Recycling	is reduced on an individual level? c) Disposal d) Burning	
35.	What is called for the process of burning furnace under suitable temperature and ope a) Landfill b) Recycling	municipal solid waste in a properly designating conditions? c) Vermicomposting d) Incineration	ed
36.	The process of decomposition of biodegrad a) Landfill b) Vermicomposting		
37.	is a liquid that passes through solid w a) Leachate b) Sludge	aste and extracts suspended impurities from c) Distilled water d) Municipal	it
38.	The colour code of plastic bag for disposing a) black b) red	g of microbial laboratory culture waste c) blue d) white	
39.	Average hospital waste produced per bed p a) 1.5 to 2 kg b) 0.5 - 4 kg		
40.	Which of the following are the main contril I. Refrigerators / freezers, washing mac II. Small household appliances III. Personal computers, telephones, lapto IV. Gas cylinders, chimneys and home ap a) Only I, II, III b) Only I & II	hines , dishwashers. ps , printers. pliances	
41.	 What is Extended Producer Responsibility in India? a) The responsibility of consumer to manage to the responsibility of manufactures to manage cycle c) The responsibility of retailers to manage to the responsibility of informal recyclers 	anage e – waste throughout the product life e – waste disposal	les
42.		the transboundary movements of hazardo b) Paris agreement d) Basel convention	us
43.	Which colour bin is used for e – waste? a) Blue b) Green	c) Yellow d) Black	
44.	What are the health hazards which can be can	aused by E – waste? c) Brain d) All of these	
	Ver –	A – 4 of 5	

					0		
45.	Preparation of Guassigned to	idelines for l	Environmen	tally	sound Managemen	nt of e	e – waste is a duty
	a) Producer	b) Con	sumer	c)	MOEFCC	d)	SP CB/PCC
46.	What is India's glaa) 3	obal rank in b) 13	e –waste?	c)	23	d)	33
47.	water pollution co	instituted?		Cont	_	eventi	on and control of
	a) 1974	b) 197	O	c)	1982	d)	1986
48.	Aerosol consisting a) Mist	g of liquid dr b) Dus	7	led as c)	Fog	d)	Aerosol
49.	Which of the folloa) Factories c) Urban and su		– point sour	ce of b) d)	water pollution? Sewage treatmen All of these	t plan	t
50.	When is World W			7	G . 1 22nd	1\	1 22nd
	a) January 26 th	b) June	3	c)	September 22 nd	d)	March 22 nd
			1				
		<u> </u>	•		13	40	
		10				7	
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		C					
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			5		10		
	C.*				•		
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CBCS SCHEME

USN						Question Paper Version: I	В

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Environmental Studies and E - Waste Management

ime:	1 hr.]			7	.0	[Max. Marks: 50			
	IN	STRUCTIO	NS TO T	THE CAN	DIDATE	S			
					. ()				
1.	Answer all the fifty	questions, each	n question	carries on	e mark.				
2.	Use only Black ball	point pen for	writing /	darkening	the circles.				
3.	For each question,	after selecting	g your ar	ıswer, dar	ken the ap	propriate circle			
	corresponding to th	ie same questi	on numb	er on the	OMR shee	t.			
4.	Darkening two circle	es for the same	question	makes the	answer inv	alid.			
5.	Damaging/overwrit	ting, using v	vhiteners	on the	OMR she	eets are strictly			
	prohibited.	۸,0)	-0					
1.	 What is Extended Producer Responsibility (EPR) as per the e – waste management rules in India? a) The responsibility of consumer to manage e – waste b) The responsibility of manufactures to manage e – waste throughout the product life cycle c) The responsibility of retailers to manage e – waste disposal d) The responsibility of informal recyclers to manage e – waste. 								
2.	Which international a waste, including e – w a) Kyoto Protocol c) Montreal Protocol	vaste?	b)	transbounda Paris agree Basel conv	ment	ents of hazardous			
3.	Which colour bin is us a) Blue	sed for e – waste b) Green	e? (c)	Yellow	d)	Black			
4.	What are the health ha								
	a) Lung cancer	b) DNA dama	ge c)	Brain	d)	All of these			
5.	Preparation of Guideli	ines for Environ	mentally	sound Mana	igement of e	e – waste is a duty			
	assigned to a) Producer	b) Consumer	c)	MOEFCC	d)	SP CB/PCC			
6.	What is India's global a) 3	rank in e –wast b) 13	e? c)	23	d)	33			
7.	When did the Karnat water pollution constit a) 1974	tuted? b) 1978		1982	-	on and control of 1986			

8.	Aerosol consisting of a) Mist	f liquid droplets is calle b) Dust	ed as	Fog.	d)	Aerosol
9.	Which of the followinga) Factoriesc) Urban and subur	ng is non – point sourc ban land		water pollution? Sewage treatment All of these	plaı	nt
10.	When is World Wate a) January 26 th	r day celebrated? b) June 5 th	c)	September 22 nd	d)	March 22 nd
11.	What is the Dissolved a) 7 mg/L	d oxygen value require b) 8.2 mg/L		r the survival of aqu 6.5 mg/L		species? 4 mg/L
12.	Which among the fol a) Land fills	lowing is used to dump b) Ocean		e waste collected in River		cities? All of these
13.	Which type of waste a) Hazardous waste c) Bio – medical was	includes items such as	b)	over food, fruit peel Organic waste Electronic waste	ls an	nd yard trimmings?
14.	Which of the integrat a) Source Reduction	ed waste management b) Recycling		educed on an individ Disposal		level? Burning
15.		ne process of burning are temperature and oper b) Recycling	atin			
16.	The process of decoma) Landfill	nposition of biodegrada b) Vermicomposting				
17.	is a liquid that particle a) Leachate	basses through solid was		and extracts suspending Distilled water		impurities from it Municipal
18.	The colour code of page a) black	lastic bag for disposing b) red		microbial laboratory blue		lture waste white
19.	Average hospital was a) 1.5 to 2 kg	ste produced per bed per b) $0.5 - 4 \text{ kg}$		y in Government ho 0.5 to 1 kg	_	tal is 0.5 – 2 kg
20.	I. Refrigerators / fII. Small householdIII. Personal compu	ng are the main contrib reezers, washing mach l appliances ters, telephones, laptophimneys and home app b) Only I & II	nine ps , olian	s, dishwashers.		world? All of these
21.	Veld type grasslands a) South Africa		c)	Australia	d)	Britain
22.	Which pyramid is alva a) Energy	vays upright? b) Biomass	c)	Numbers	d)	Food chain
	10	Ver – I	3 – 2	2 of 5		

23.	In what form is solar energy is radiated from the Sun? a) Ultraviolet Radiation b) Infrared Radiation c) Electromagnetic waves d) Transverse waves
24.	What does MHD stands for in the energy field? a) Magneto Hydro Dynamic b) Metal Hydrogen Detox c) Micro Hybrid Drive d) Metering Head Differential
25.	The 'Miracle Material' that can turn CO ₂ into liquid fuel is: a) Propane b) Copper c) Graphene d) Potassium
26.	A tide whose difference between high and low tide is greatest. a) Diurnal tide b) Neap tide c) Spring tide d) Ebb tide
27.	Which of the turbine can be mounted vertically and horizontally. a) Pelton wheel b) Kaplan turbine c) Gorlov turbine d) Francis turbine
28.	Which type of fuel is removed from the reactor core after reaching end of core life service? a) Burnt fuel b) Spent fuel c) Engine oil d) Radioactive fuel
29.	What is a fuel cell? a) Converts heat energy to chemical energy b) Converts heat energy to electrical energy c) Converts chemical energy to electrical energy d) Converts kinetic energy to heat energy
30.	Which one of the following is the apex organization in our country in the field of pollution control? a) Water Pollution Control Board c) Central Pollution Control Board d) Air Pollution Control Board
31.	Which of the following conceptual spheres of the environment is having the least storage capacity for matter? a) Atmosphere b) Lithosphere c) Hydrosphere d) Biosphere
32.	The ratio between energy flows at different points in a food chain is known as a) Ecological capacity b) Ecological efficiency c) Ecological assimilation d) Ecological potential
33.	A predator is a) An animal that is fed upon another animal b) Animal that feeds upon both plants and animals c) An animal that feeds upon another animal d) A primary consumer
34.	 Why Rann of Kutch attracts aquatic birds in monsoon season? a) Because desert land is converted to forest land b) Because desert land is converted to snow c) Because desert land do not convert d) Because desert land is converted to salt marshes

35.	Which kind of soil w a) Rocky	e can find on the surf b) Moist		Thar desert? Fertile	d)	Aeolian
	,	,	,		u)	710011411
36.	Which of the following				c	4
	a) Tropical Evergree		b)	Tropical Deciduo Grassland forest	us ior	ests
	c) Tropical Montana	a loresis	d)	Grassianu iorest		
37.	Hot spots areas have			,	1)
	a) Low density of b	iodiversity	b)	Only endangered	plant	CS.
	c) High density of h	ot springs	d)	High density of b	oiodiv	ersity
20	C 4 : 11 D 1			<i>(</i> C)		
38.	Sustainable Developi	ment means eeds without compro	misino	on future needs		
	b) progress of human		1111811118	g on future needs		
		numan needs and the	ability	of earth to provid	e the i	resources
	d) all of these	Y	•••	or with the provide		
39.	The term Alpha diver	rsity refers to	Gv			
	a) Genetic diversity	21: 24		Community and e	cosysi	tem diversity
		within a community of	or ecos	system		
	d) Diversity among t	the plant				
40.	Algae, green plants a	and photosynthetic ba	cteria	are		
	a) Autotrophic	b) Heterotrophic		Decomposers	d)	Consumers
			•	73	C	A
41.		rinking water high in			1)
	a) Cholerac) Liver problem		_ ′	Kidney problem Methomoglobinen	nio	
	c) Liver problem	1	uj	Wichloffloglobile	μια	
42.	Bhopal gas tragedy to	ook place in the year	7 2	and the gas respons	sible v	was
	a) 1964, Hydrogen f			1974, Methyl chlo		
	c) 1984, methyl ISO	cyanide	d)	1994, Methyl sulp	hate	
43.	The major chamical	pollutants in photoche	miool	gmog ara		
43.	a) NO, NO ₂ , VOC,			N_2O , NO_2 , VOC	¹ O2	PAN
	c) NO, NO ₂ , VOC,			NO, N ₂ O ₅ , VOC		
	,		C_{1}	1.0,1.203, . 00	, - 5 ,	
44.	The international pro	tocol to protect the O		-		
	a) Vienna protocol	Y		Kyoto protocol	_	
	c) Cartagena protoco	ol C	d)	Montreal protoco	l	
45.	Which is the best and	the worst method of	hlum	e behavior for poll	ution	dispersion?
10.	a) Lofting and fum	~		Trapping and fan		dispersion.
	c) Conning and fur	_	d)	Fanning and Lof	_	
	,	1		C		
46.	What is called for a T			TD 1 .		
	a) Temporary ear pa	*	b)	Temporary heari		
	c) Temporary thresh	ioia sniit	d)	Temporary hear	ıng sh	111
47.	What timings loud sp	beakers shouldn't use	in pul	olic areas?		
-	a) 10.00 pm to 5.00		b)	11.00 pm to 6.00	am	
	c) 1.00 am to 7.00 ar		d)	10.00 pm to 6.00		
		Vor	\mathbf{D}	of 5		

48.	In which section, if a according to Environ			tions, is liable for penalty
	a) Section 12	b) Section 15	c) Section 18	d) Section 19
49.	'Minamata Disease" a) Lead	is caused due to b) Arsenic	c) Mercury	d) Cadmium
50.	a) Chlorination c) Defluoridation	ver –	tent from water is calle b) Fluoridation d) Fanning and L	d as
	<u> </u>	Ver –	B-5 of 5	

30.01.2015

USN				Question Paper Version : C	

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 **Environmental Studies and E - Waste Management**

ime:	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.
1.	is caused by drinking water high in nitrates. a) Cholera b) Kidney problem c) Liver problem d) Methomoglobinemia
2.	Bhopal gas tragedy took place in the year and the gas responsible was a) 1964, Hydrogen fluoride b) 1974, Methyl chloride c) 1984, methyl ISO – cyanide d) 1994, Methyl sulphate
3.	The major chemical pollutants in photochemical smog are
	 a) NO, NO₂, VOC, O₃, PAN b) N₂O, NO₂, VOC, O₃, PAN c) NO, NO₂, VOC, O₂, PAN d) NO, N₂O₅, VOC, O₃, PAN
4.	The international protocol to protect the Ozone layer is
_1	a) Vienna protocolb) Kyoto protocold) Montreal protocol
5.	Which is the best and the worst method of plume behavior for pollution dispersion? a) Lofting and fumigation b) Trapping and fanning c) Conning and fumigation d) Fanning and Lofting
6.	What is called for a Temporary hearing loss? a) Temporary ear pain b) Temporary hearing problem c) Temporary threshold shift d) Temporary hearing shift

What timings loud speakers shouldn't use in public areas?

a) 10.00 pm to 5.00 am

b) 11.00 pm to 6.00 am

c) 1.00 am to 7.00 am

d) 10.00 pm to 6.00 am

8.	according to Enviror	a person violates the nonmental Protection Act,	, 198	66.		
	a) Section 12	b) Section 15	c)	Section 18	a)	Section 19
9.	'Minamata Disease"	is caused due to		*		
	a) Lead	b) Arsenic	c)	Mercury	d)	Cadmium
10.	The process of reduce a) Chlorination	ing the fluoride conten		m water is called a Fluoridation	S	
	c) Defluoridation		d)	Fanning and Loft	ing	
4.4	WI (. D (1.1D		(ED			
11.		roducer Responsibility	(EP	R) as per the e – w	aste	management rules
	in India?	y of consumer to manage	70.0	wasta		
		y of consumer to manag y of manufactures to m	-		hout	the product life
	cycle	y of manufactures to m	anag	ge e – waste tillougi	ioui	the product me
	-	of retailers to manage	e –	waste disposal		
	, .	y of informal recyclers		•		
	5	,		8		
12.		agreement regulates	the	transboundary mo	veme	ents of hazardous
	waste, including e –	waste?				
	a) Kyoto Protocol	40		Paris agreement		
	c) Montreal Protoco	ol	d)	Basel convention		
13.	Which colour bin is	used for a waste?		V6.		
13.	a) Blue	b) Green	c)	Yellow	(b)	Black
	u) Diac	b) Green		Tellow	a)	Bluck
14.	What are the health l	nazards which can be c	ause	d by E − waste?	·	
	a) Lung cancer	b) DNA damage	c)	Brain	d)	All of these
15.	Preparation of Guide	elines for Environment	ally	sound Managemen	t of e	e – waste is a duty
	assigned to					
	a) Producer	b) Consumer	c)	MOEFCC	d)	SP CB/PCC
1.0	W/L-4/:- L-1:-?1-1-	1 1 1 1 1 1				
16.	What is India's globa		<i>(</i> 0)	23	4)	33
	a) 3	b) 13	(c)	23	d)	33
17.	When did the Karn	ataka State Pollution	Cont	rol Board for pre-	venti	on and control of
	water pollution cons			•		
	a) 1974	b) 1978	c)	1982	d)	1986
18.		f liquid droplets is calle			•	
	a) Mist	b) Dust	c)	Fog	d)	Aerosol
19.	Which of the follows	ng is non – point sourc	o of	water pollution?		
1).	a) Factories	ing is non – point sourc	b)	Sewage treatment	nlan	ıt
	c) Urban and subu	rban land	d)	All of these	Pian	
	c) Croun and buou)	4)			
20.	When is World Water	er day celebrated?				
	a) January 26 th	b) June 5 th	c)	September 22 nd	d)	March 22 nd

21.	what is the Dissolved a) 7 mg/L	d oxygen value require b) 8.2 mg/L		r the survival of aqu 6.5 mg/L		species? 4 mg/L
22.	Which among the fol a) Land fills	lowing is used to dump b) Ocean		waste collected in River		cities? All of these
23.	Which type of waste a) Hazardous waste c) Bio – medical was	includes items such as	lefte b) d)	Over food, fruit peel Organic waste Electronic waste	s an	d yard trimmings?
24.	Which of the integrat a) Source Reduction	ed waste management b) Recycling		educed on an individ Disposal		level? Burning
25.		e process of burning the temperature and open b) Recycling	ratin			
26.	The process of decon a) Landfill	nposition of biodegradable b) Vermicomposting				rms is called Shredding
27.	is a liquid that particle a) Leachate	b) Sludge		and extracts suspend Distilled water		impurities from it Municipal
28.	The colour code of plan black	astic bag for disposing b) red		microbial laboratory blue		ture waste white
29.	Average hospital was a) 1.5 to 2 kg	te produced per bed per b) $0.5 - 4 \text{ kg}$				tal is 0.5 – 2 kg
30.	I. Refrigerators / fII. Small householdIII. Personal computIV. Gas cylinders, c	ters, telephones, lapto himneys and home app	ps , j	s, dishwashers.		world? All of these
31.	Veld type grasslands a) South Africa	are located at b) South America	(c)	Australia	d)	Britain
32.	Which pyramid is alv a) Energy	vays upright? b) Biomass	c)	Numbers	d)	Food chain
33.	In what form is solar a) Ultraviolet Radiat c) Electromagnetic w		b)	e Sun? Infrared Radiation Transverse waves		
34.	What does MHD star a) Magneto Hydro I c) Micro Hybrid Dri	, -	eld? b) d)	Metal Hydrogen D Metering Head Di		
35.	The 'Miracle Materia a) Propane	l' that can turn CO ₂ in b) Copper Ver – 0	c)	Graphene	d)	Potassium

36.	A tide whose difference between high and low tide is greatest. a) Diurnal tide b) Neap tide c) Spring tide d) Ebb t	ide
37.	Which of the turbine can be mounted vertically and horizontally. a) Pelton wheel b) Kaplan turbine c) Gorlov turbine d) Franci	s turbine
38.	Which type of fuel is removed from the reactor core after reaching end of service? a) Burnt fuel b) Spent fuel c) Engine oil d) Radioa	
39.		
40.	Which one of the following is the apex organization in our country in the pollution control? a) Water Pollution Control Board c) Central Pollution Control Board d) Air Pollution Control Board	
41.	Which of the following conceptual spheres of the environment is having the lecapacity for matter? a) Atmosphere b) Lithosphere c) Hydrosphere d) Biosp	
42.	The ratio between energy flows at different points in a food chain is known as a) Ecological capacity b) Ecological efficiency c) Ecological assimilation d) Ecological potential	
43.	A predator is a) An animal that is fed upon another animal b) Animal that feeds upon both plants and animals c) An animal that feeds upon another animal d) A primary consumer	
44.	 Why Rann of Kutch attracts aquatic birds in monsoon season? a) Because desert land is converted to forest land b) Because desert land is converted to snow c) Because desert land do not convert d) Because desert land is converted to salt marshes 	
45.	Which kind of soil we can find on the surface of Thar desert? a) Rocky b) Moist c) Fertile d) Aeoli	an
46.	Which of the following type of forest important for watersheds? a) Tropical Evergreen forests b) Tropical Deciduous forests c) Tropical Montana forests d) Grassland forest	
47.	Hot spots areas have a) Low density of biodiversity b) Only endangered plants c) High density of hot springs d) High density of biodiversity Ver. C. 4 of 5	

- **48.** Sustainable Development means
 - a) meeting present needs without compromising on future needs
 - b) progress of human beings
 - c) balance between human needs and the ability of earth to provide the resources
 - d) all of these
- **49.** The term Alpha diversity refers to
 - a) Genetic diversity

- b) Community and ecosystem diversity
- c) Species diversity within a community or ecosystem
- d) Diversity among the plant
- **50.** Algae, green plants and photosynthetic bacteria are
 - a) Autotrophic
- b) Heterotrophic
- c) Decomposers
- d) Consumers

30.01.2015

CBCS SCHEME

USN						Question Paper Version: D

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2024/Jan.2025 Environmental Studies and E - Waste Management

ime:	1 hr.] [Max. Marks: 50
mic.	Tim.
	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.
1.	What is the Dissolved oxygen value required for the survival of aquatic species?
	a) 7 mg/L b) 8.2 mg/L c) 6.5 mg/L d) 4 mg/L
2.	Which among the following is used to dump the waste collected in the cities? a) Land fills b) Ocean c) River d) All of these
	Which type of waste includes items such as leftover food, fruit peels and yard trimmings? a) Hazardous waste b) Organic waste c) Bio – medical waste d) Electronic waste
4.	Which of the integrated waste management is reduced on an individual level? a) Source Reduction b) Recycling c) Disposal d) Burning
5.	What is called for the process of burning municipal solid waste in a properly designed furnace under suitable temperature and operating conditions? a) Landfill b) Recycling c) Vermicomposting d) Incineration
6.	The process of decomposition of biodegradable solid waste by earthworms is called a) Landfill b) Vermicomposting c) Composting d) Shredding
7.	is a liquid that passes through solid waste and extracts suspended impurities from it a) Leachate b) Sludge c) Distilled water d) Municipal
	The colour code of plastic bag for disposing of microbial laboratory culture waste a) black b) red c) blue d) white
9.	Average hospital waste produced per bed per day in Government hospital is a) $1.5 \text{ to } 2 \text{ kg}$ b) $0.5 - 4 \text{ kg}$ c) $0.5 \text{ to } 1 \text{ kg}$ d) $0.5 - 2 \text{ kg}$
	Ver - D - 1 of 5

10.	Which of the following are the main contributors of the e –waste in the world? I. Refrigerators / freezers , washing machines , dishwashers. II. Small household appliances III. Personal computers, telephones , laptops , printers. IV. Gas cylinders, chimneys and home appliances a) Only I, II, III b) Only I & II c) Only I, III , IV d) All of these
11.	Which of the following conceptual spheres of the environment is having the least storage capacity for matter? a) Atmosphere b) Lithosphere c) Hydrosphere d) Biosphere
12.	The ratio between energy flows at different points in a food chain is known as a) Ecological capacity b) Ecological efficiency c) Ecological assimilation d) Ecological potential
13.	A predator is a) An animal that is fed upon another animal b) Animal that feeds upon both plants and animals c) An animal that feeds upon another animal d) A primary consumer
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17.	Hot spots areas have a) Low density of biodiversity b) Only endangered plants c) High density of hot springs d) High density of biodiversity
18.	Sustainable Development means a) meeting present needs without compromising on future needs b) progress of human beings c) balance between human needs and the ability of earth to provide the resources d) all of these
19.	The term Alpha diversity refers to a) Genetic diversity b) Community and ecosystem diversity c) Species diversity within a community or ecosystem d) Diversity among the plant
20.	Algae, green plants and photosynthetic bacteria are a) Autotrophic b) Heterotrophic c) Decomposers d) Consumers

21.	What is Extended Producer Responsibility (in India? a) The responsibility of consumer to manage		 waste management rules
	b) The responsibility of manufactures to maccycle		oughout the product life
	c) The responsibility of retailers to managed) The responsibility of informal recyclers		e. (C)
22.	Which international agreement regulates waste, including e – waste? a) Kyoto Protocol c) Montreal Protocol	the transboundaryb) Paris agreementd) Basel convent	nt
23.	Which colour bin is used for e – waste? a) Blue b) Green	c) Yellow	d) Black
24.	What are the health hazards which can be ca a) Lung cancer b) DNA damage	, ,	d) All of these
25.	Preparation of Guidelines for Environmenta assigned to a) Producer b) Consumer	olly sound Manager c) MOEFCC	ment of e – waste is a duty d) SP CB/PCC
26.	What is India's global rank in e –waste? a) 3 b) 13	c) 23	d) 33
27.	When did the Karnataka State Pollution (water pollution constituted? a) 1974 b) 1978	Control Board for c) 1982	prevention and control of d) 1986
28.	Aerosol consisting of liquid droplets is calle a) Mist b) Dust	d as c) Fog	d) Aerosol
29.	Which of the following is non – point sourcea) Factoriesc) Urban and suburban land	b) Sewage treatr d) All of these	
30.	When is World Water day celebrated? a) January 26 th b) June 5 th	c) September 22	nd d) March 22 nd
31.	is caused by drinking water high in na) Cholerac) Liver problem	itrates. b) Kidney proble d) Methomoglob	
32.	Bhopal gas tragedy took place in the yeara) 1964, Hydrogen fluoride c) 1984, methyl ISO – cyanide	_	ponsible was chloride
33.	The major chemical pollutants in photochem a) NO, NO ₂ , VOC, O ₃ , PAN c) NO, NO ₂ , VOC, O ₂ , PAN Ver – I	hical smog are b) N ₂ O, NO ₂ , V d) NO, N ₂ O ₅ , V D – 3 of 5	

34.	The international protocol to protect the Oze a) Vienna protocol c) Cartagena protocol	one b) d)	layer is Kyoto protocol Montreal protocol		
35.	Which is the best and the worst method of pa) Lofting and fumigation c) Conning and fumigation	olum b) d)	e behavior for pollu Trapping and fann Fanning and Lofti	ing	dispersion?
36.	What is called for a Temporary hearing loss a) Temporary ear pain c) Temporary threshold shift	b) d)	Temporary hearing		
37.	What timings loud speakers shouldn't use in a) 10.00 pm to 5.00 am c) 1.00 am to 7.00 am	n pu b) d)	blic areas? 11.00 pm to 6.00 a 10.00 pm to 6.00 a		
38.	In which section, if a person violates the no according to Environmental Protection Act, a) Section 12 b) Section 15	198	-		s liable for penalty Section 19
39.	'Minamata Disease" is caused due to a) Lead b) Arsenic	c)	Mercury	d)	Cadmium
40.	The process of reducing the fluoride contents a) Chlorinationc) Defluoridation	b)	m water is called as Fluoridation Fanning and Loftin		
41.	Veld type grasslands are located at a) South Africa b) South America	c)	Australia	d)	Britain
42.	Which pyramid is always upright? a) Energy b) Biomass	c)	Numbers	d)	Food chain
43.	In what form is solar energy is radiated from a) Ultraviolet Radiation c) Electromagnetic waves		e Sun? Infrared Radiation Transverse waves		
44.	What does MHD stands for in the energy fie a) Magneto Hydro Dynamic c) Micro Hybrid Drive	_	Metal Hydrogen D Metering Head Dif		
45.	The 'Miracle Material' that can turn CO ₂ in a) Propane b) Copper		quid fuel is : Graphene	d)	Potassium
46.	A tide whose difference between high and lea) Diurnal tide b) Neap tide		ide is greatest. Spring tide	d)	Ebb tide
47.	Which of the turbine can be mounted vertice a) Pelton wheel b) Kaplan turbine			4)	Francis turbine

- **48.** Which type of fuel is removed from the reactor core after reaching end of core life service?
 - a) Burnt fuel
- b) Spent fuel
- c) Engine oil
- d) Radioactive fuel

- **49.** What is a fuel cell?
 - a) Converts heat energy to chemical energy
 - b) Converts heat energy to electrical energy
 - c) Converts chemical energy to electrical energy
 - d) Converts kinetic energy to heat energy
- **50.** Which one of the following is the apex organization in our country in the field of pollution control?
 - a) Water Pollution Control Board
- b) State Pollution Control Board
- c) Central Pollution Control Board
- d) Air Pollution Control Board

30.01.2015

CBCS SCHEME

IISN						Question Paper Version:	A
USN							

Fifth Semester B.E./B.Tech. Degree Examination, June/July 2025 **Environmental Studies and E-Waste Management**

ime:	1 hr.]		[Max. Marks: 50
	INSTRUCTIONS T	O THE CANDIDA	TES
1.	Answer all the fifty questions, each ques	stion carries one mark	
2.	Use only Black ball point pen for writing		
3.	For each question, after selecting you		
	corresponding to the same question no		
4.	Darkening two circles for the same ques		
5.	Damaging/overwriting, using white		
	prohibited.		
1.	In an ecosystem biological cycling of mater a) Producer b) Consumer	rials is maintained by c) Decomposer	d) All of these
2.	The primary producers in a forest ecosystem a) Chlorophyll containing trees and plants c) Carnivores		micro - organisms
3.	Which of the following is the terrestrial eco a) Forest b) Grass land	system? c) Desert	d) All of these
4.	Food web consists of a) a portion of food chain c) interlocking food chain	b) an organism position d) a set of similar con-	
5.	The area of National Parks range between a) 0.61 to 7818 kms b) 0.04 to 3162 kms	c) 0.14 to 3612 kms	d) 0.16 to 8718 kms
6.	Which Indian state has its maximum area us a) Maharashtra b) Madhya Pradesh	nder the forest cover? c) Arunachal Pradesh	d) Karnataka
7.	How many parts are there in forest ecosyste a) Biotic type b) Abiotic type	em? c) Both (a) & (b)	d) None of these
8.	To which of the following is Ramsor conve a) Protection of wild life c) Protection of rivers	ntion related? b) Protection of environments of the protection of wetlands.	
		A – 1 of 4	
^			

9.	Which of the following option is not included in the sustainable development parameters? a) Gender inequality b) Intergenerational and intragenerational equity c) Growing annually d) None of these
10.	How many sustainable development goals are there? a) 10 b) 12 c) 13 d) 17
11.	Which of the following are biodegradable pollutants? a) Plastics b) Domestic sewage c) Detergent d) All of these
12.	BOD means a) Biochemical Oxygen Demand c) Biophysical oxygen Demand d) Chemical Oxygen Demand d) All of these
13.	Sound beyond which of the following level can be regarded as a pollutant. a) 40 dB b) 80 dB c) 120 dB d) 150 dB
14.	Which of the following is a point source of water pollution? a) Factories b) Sewage treatment plants c) Urban & Sub – urban lands d) Both (a) & (b)
15.	Pesticide causes a) Eye irritation b) Skin irritation c) Respiratory ailment d) All of these
16.	Amount of waste infectious produced in hospitals. a) 45 % b) 65 % c) 80 % d) 100 %
17.	Cytotoxic and expired drugs are disposed of by a) Dumping b) Autoclave c) Incineration d) All of these
18.	Color code of plastic bag for disposing of microbial laboratory culture waste a) Black b) Red c) Blue d) White
19.	All of the waste are incinerated except a) Reactive chemical waste c) Mutilated parts b) Vaccine d) Discarded drugs
20.	The average composition of municipal solid waste is a) 41 % organic, 40 % inert & 19 % recyclable. b) 20 % organic, 60% inert & 20 % recyclable c) 30 % organic, 20% inert & 50 % recyclable d) 19 % organic, 41% inert & 40 % recyclable
21.	Major atmospheric gas layer in stratosphere is a) Hydrogen b) Carbon dioxide c) Ozone d) Helium
22.	World Environment day is on a) 5 th May b) 5 th June c) 3 rd Jan d) 1 st June
^	Ver – A – 2 of 4

23.	Which of the following is not a green house a) Hydro chlorofluorocarbons c) CO ₂	gas b) d)	? Methane SO ₂		
24.	Global warming could affect a) Climate c) Melting of glaciers	b) d)	Increase in sea level All of these	el	
25.	Primary cause of acid rain around the world a) Carbon dioxide b) Sulphur dioxide			d)	Ozone
26.	 What is the main reason for the depletion of a) Rains are less frequent b) Tree cover has reduced c) Tube wells and hand pumps are used for d) The course of river being changed and of 	r irri	gation		
27.	What happens when water contains 8 − 20 I a) Blue baby disease c) Dental fluorosis	PPM b) d)			on?
28.	Coral reefs of India are located in a) Goa c) Andaman & Nicobar Islands	b) d)	Himalayan region Uttar Pradesh		
29.	What is the allowable concentration of fluor a) 1.0 mg/L b) 1.25 mg/L		in drinking water? 1.5 mg/L	d)	1.75 mg/L
30.	Minmata disease is caused by a) Lead b) Mercury	c)	Cadmium	d)	Arsenic
31.	When did National Disaster Management A a) 2000 b) 2005		ority form? 2010	d)	2015
32.	Scientific study of earthquake is called a) Seismograph b) Seismology	c)	Both (a) & (b)	d)	None of these
33.	Mass killing diseases can be referred as a) Biological disasterc) War disaster	b) d)	Industrial disaster Flood disaster		
34.	South Africa is leading exporter of which ma) Copper b) Diamond		al? Silver	d)	Gold
35.	Which one of the following is an exhaustible a) Coal b) Rain precipitation			d)	Tidal energy
36.	Which of the following is a non – renewable a) Solar energy b) Wind energy		ource? Fossil fuels	d)	Hydro power

37.	Which of the followinga) Overuse of ground vc) Rainwater harvesting	water		nable use of water re Building dams on Dumping industria	rive	rs
38.	Geothermal energy is a a) Heat energy b) Current energy	c)	Wind energy	d)	Solar energy
39.	Molasses from sugar inca Biodiesel b	dustry is used to ger) Hydrogen		e Bio-ethanol	d)	Bio - methanol
40.	Nuclear power plant in			Raichur	d)	Kaiga
41.	Wild Life Protection Aca a) 1978 b	et in India was passe) 1972	ed in c)	1986	d)	1992
42.	Environment Protection a) 1986 b	Act was enacted in 1974	yea c)	r 1992	d)	1984
43.	Water Protection Act w a) 1974 b	as enacted in) 1990	c)	1985	d)	2021
44.	Blue baby syndrome is a) Phosphates b	caused by the conta) Sulphur		ntion of water due to Arsenic	d)	Nitrates
45.	Which toxic compound a) Mercury b	is not found in e – v Cadmium		e? Neon	d)	Lead
46.	What are the health haz a) Lung cancer b				d)	All of these
47.	The Kyoto protocol was a) 3 rd conference of UN b) Convention on the tr c) UNFCC in 1992 d) Convention on Biolo The primary cause of ac a) Carbon dioxide b	FCC in 1977 rans boundary effect ogical diversity rid rain around the v	world		d)	Ozone
49.	The carbon "credit is per a) One tonne of CO ₂ c) 5 tonnes of CO ₂	ermit" representing t		ight to emit. 10 tonnes of CO ₂ 15 tonnes of CO ₂		
50.	Fossil fuels are converted a) Burning b	ed into energy by Cooling	c)	Sublimation	d)	Melting
	ac'	* * *	**			
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