CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY, BHILAI

University Teaching Department

November 2023

CLASS TEST - I

Dpartment of computer science and Engineering (AI)

Subject: Foundations of Electronics Engineering — Subject Code:A000171 (028)

TIME: 120 Minutes — MAX. MARKS: 40

Note: Question 1 and 2 are compulsary *Attempt ANY four from question 3 to 7.*

Q-1	Give the circuit fof forward bias and reverse bias of diode.	4
Q-2	Write a note on continuity equation	4
Q-3	What is intrinsic semiconductor? Explian the formantion of p-type and n-type semiconductor.	8
Q-4	Explain fermi deirac distribution function along with variation in temperature.	8
Q-5	Give current component of diode. What is avalanche breakdown?	4+4
Q-6	Explain the VI characterstics of diode with suitable diagram.	8
Q-7	Sketch and explain the circuit and output waveform of half wave rectifier.	8

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

Department of Computer Science & Engineering

Class Test – I Session- Nov – Dec, 2023 Month-Nov

Sem- CSE 1st(AI)/DS

Subject name – Engineering Mathematics-I **Subject- Code-A000172(014)**

Max Marks: 40 Min Marks:14 Time Allowed:2 hrs

Note: -Part A is compulsory, attempt any questions from B,C and D.

***CO1:* Solve engineering related problems based on concepts of Univariate calculus.**

***C02:* Use basic concepts of complex variable to solve related problems.**

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Unit I			
Q1	State Langrange's Mean Value Theorem(LMVT). Verify LMVT for the function: $f(x) = x^3$ *in the interval* $[-2,2]$.	[4]	Apply	CO1
Q2	(a)Expand $f(x) = \log(1-x)$, by Maclaurin's theorem (b)If $y = (x+\sqrt{x^2-1})^m$,by using Leibniz's theorem prove that $(x^2-1)y_{n+2} + (2n+1)xy_{n+1} + (n^2-m^2)y_n = 0$.	[8]	Apply	CO1
Q3	Define Integral as a limit of sums? Find the limit, when $n \to \infty$ of the series $\frac{n}{n^2+1^2} + \frac{n}{n^2+2^2} + \frac{n}{n^2+3^2} + \cdots + \frac{n}{n^2+(n-1)^2}$.	[8]	Analyze	CO1
Q4	Prove that every differentiable function is continuous and give an example which shows that converse is not always true.	[8]	Apply	CO1
	Unit II			
Q1	Explain analytic function and write it's any four properties?	[4]	Apply	CO2
Q2	Define Harmonic function and harmonic conjugate function. Prove that $u = x^2 - y^2$ and $v = \frac{y}{x^2+y^2}$ are harmonic functions but are not harmonic conjugates to each other.	[8]	Understand	CO2
Q3	State Cauchy-Riemann equations and give an example which satisfy Cauchy-Riemann equation but not Analytic.	[8]	Apply	CO2
Q4	State Milne's Thomson method. By using Milne's Thomson method, find the analytic function f(z) if $u = \frac{sin2x}{cosh2y+co2x}$.	[8]	Understand	CO2

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

Department of Computer Science & Engineering

Class Test – I Session- July – Dec, 2023 Month-November

CSE B. Tech 1st Semester AI

Subject-LPCC **Code - A000173(022)**

Time Allowed:2 hrs Max Marks: 40

Note: - 1. Question (A) from each unit is compulsory.
2. From Questions B, C and D of each unit attempt any 2 questions.

CO1: Students will get introduced to C programming language, data types, operators, constant variables and learn about conditional and iterative statements to write c programs
C02: Student's will be able to Illustrate the flowchart and designing an algorithm for a given problem to develop c programs using operators.

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Unit I			
Q1	Differentiate between Bit wise operator and logical operator in C with suitable example.	[4]	Understand	CO1
Q2	Draw and explain basic structure of a C program? Define each section of structure with example	[8]	Analyze	CO1
Q3	Differentiate between while loop and do- while loop with syntax and example?	[8]	Analyze	CO1
Q4	What is type conversion in C. Explain different types of conversion with syntax and suitable example? Write the use of #define and #include directive.	[8]	Apply	CO1
	Unit II			
Q1	Define algorithm. Explain flowchart and pseudocode with suitable example?	[4]	Understand	CO1, CO2
Q2	Write a C program to find whether a given year is a leap year or not using if else if statement also draw the flowchart of the same program.	[8]	Apply	CO2
Q3	Write a C program to compute the sum of the first 10 natural numbers also write the pseudo-code of the same.	[8]	Apply	CO2
Q4	Write the proper syntax of switch statement with example and draw the flowchart of switch statement	[8]	Understand	CO1, CO2

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

University Teaching Depaqrtment

Department of Computer Science & Engineering

Class Test – I Session- July – Dec, 2023 Month-November

Sem- CSE 1st AI/DS

Subject- Fundamentals of Computational Biology

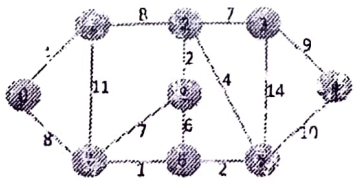
Code-A000174(028)

Time Allowed:2 hrs **Max Marks: 40**

Note: - Each question contains four parts. Part (a) of each question is compulsory. Attempt any two parts from (b), (c), and (d) of each question.

CO1: Gain proficiency in Mathematical Modelling in Biological Contexts.

CO2: Acquire Advanced Data Visualization Skills.

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Unit I			
Q1	List and explain different steps involved in mathematical modelling.	[4]	Understand	CO1
Q2	What are different bacterial growth phases? Bacillus cereus divides every 30 minutes. You inoculate a culture with exactly 100 bacterial cells. After 3 hours, how many bacteria are present?	[8]	Apply	CO1
Q3	Explain and derieve Michaelis-Menten equation. $$V_0 = \frac{V_{max}\,[S]}{[S] + k_m}$$	[8]	Analyze	CO1
Q4	Suppose that a firm is producing 100 units with a labour force of 30 and capital investment of 40 (in appropriately sized units). Let us assume the labour contribution to be 0.65. Find out the production equation. What conclusions can you draw from it?	[8]	Apply	CO1
	Unit II			
Q1	Define Graph. Explain adjacency matrix representation of a Graph with an example.	[4]	Understand	CO2
Q2	Explain bar plots with an example. Mention when to use bar plots and when to avoid bar plots with example/justification.	[8]	Understand	CO2
Q3	Briefly explain Dijkstra's algorithm. Find the shortest paths from node 0 to all vertices in the following graph. 	[8]	Apply	CO2
Q4	Prove the following theorems. (a) $2e = \sum_{v \in V} deg(v)$ (b) An undirected graph has even number of vertices with odd degree.	[8]	Analyze	CO2

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

Department of Computer Science & Engineering

Class Test – I | **Session- July – Dec, 2023** | **Month-November**

Sem- CSE I AI/DS | **Subject- Environment Science** | **Code-A000175(020)**

Time Allowed:2 hrs | **Max Marks: 40**

Note: - Q1 is compulsory for both units.
Attempt any two from questions 2, 3 and 4 for each unit.

CO1:To make ware of global environment issues

CO2: To make students undertand the different spheres, types of resources and their conservation in judicious manner

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Unit I			
Q1	Discuss the various social issues related to environment and strategies to overcome it.	[4]	Apply	CO1
Q2	How environment has an effeect on human health. Discuss few health related diseases.	[8]	Apply	CO1
Q3	Write detailed notes on women and child welfare.	[8]	Understand	CO1
Q4	Discuss the social consequences of development and environment changes	[8]	Apply	CO1
	Unit II			
Q1	Write short note on different layers of lithospheres.	[4]	Apply	CO2
Q2	Write detailed notes on spheres.	[8]	Understand	CO2
Q3	Write detailed note on types of resources along with their uses and examples.	[8]	Analyse	CO2
Q4	Write detailed notes on 3R principle.	[8]	Understand	CO2

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

UNIVERSITY TEACHING DEPARTMENT

Department of Computer Science & Engineering

Class Test – I Session- July – Dec, 2023 Month-October

Sem- CSE 1st AI/DS

Subject- Professional Ethics &life skills **Code-A000176(46)**

Time Allowed:2 hrs Max Marks: 40

Note: Q1of each unit is compulsory. Attempt any two from remaining questions.

CO1: To Understant Value, Ethics and morals with reference to human society.
CO2: To evaluate various ethical theories in context with professional ethics.

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Unit I			
Q1	Define in your own words "Professional Ethics	[4]	1	CO1
Q2	Describe why Ethics matters in Profession?	[8]	2	CO1
Q3	Differnitiate the terms morals and ethics	[8]	2	CO1
Q4	Explain the five fundamental bases of Human Value?	[8]	2	CO1
	Unit II			
Q1	Define Value in your own words?	[4]	1	CO1,
Q2	Explain in detail the ascending order of human needs along with level diagram?	[8]	2	CO2
Q3	Differentiate Education V/s Value based education	[8]	2	CO2
Q4	Write a note on Kohlberg's Theory?	[8]	1	CO2

CHHATTISGARH SWAMI VIVEKANAND TECHNICAL UNIVERSITY

UNIVERSITY TEACHING DEPARTMENT

Department of Computer Science & Engineering

Class Test – I Session- July – Dec, 2023 Month-October

Sem- CSE 1st AI/DS

Subject-Language and Writing Skills Code-A000177(46)

Time Allowed:2 hrs. Max Marks: 40

Note: Q1of each unit is compulsory. Attempt any two from remaining questions.

CO1: To Demonstrate a comprehensive understanding of communication theories and their application across diverse contexts.

C02: To Develop a comprehensive understanding of sentence structure, ensuring the correct arrangement of subjects, verbs, and other elements.

Q.N.	Questions	Marks	Levels of Bloom's Taxonomy	COs
	Unit I			
Q1	Explain communication cycle?	[4]	2	CO1
Q2	Discuss the objectives of communication?	[8]	2	CO1
Q3	How clarity and completeness are important for communication? Explain	[8]	1	CO1
Q4	"Semantic and physical barriers affect the free flow of Communication". Explain.	[8]	2	CO1
	Unit II			
Q1	Differentiate between Listening and Hearing?	[4]	2	CO1,
Q2	What are the strategies of effective listening?	[8]	2	CO1
Q3	Fill in the blanks with the Prepositions. a. The book was------the table. b. The teacher was angry-----us. c. We shall travel------train. d. He jumped---the river e. I have been waiting here-----a long time. f. I am senior--- you g. I prefer milk---tea. h. Don't go out-----the rain	[8]	1	CO2
Q4	Fill in the blank with suitable verbs choosing from the brackets. a. Either he or I ------guilty (am, is). b. ------he or they to blame? (is, are) c. The poet and the philosopher---- said so. (have,has) d. He -----not go there. (dare,dares) e. He -----to go there. (dare, dares) f. Time and tide---- for no man. (wait,waits) g. No news ----good news. (is, are) h. Lots of people ----- still coming. (is, are)	[8]	1	CO2