



Class Test -I Examination

Second Year B. Tech. (CSE/AIIML/AIDS)
Course Name (Discrete Mathematics/UBTCE207)
ODD Semester (2024-25)

Total No. of Questions-2

Total No. of Printed Pages-1

[Time: 1 Hr. 00 min.]

[Max. Marks: 20]

Instructions:

IMP: Verify that you have received a question paper with correct course, code, branch etc.

- All questions are compulsory.
- Assume suitable data wherever necessary.
- Neat labelled diagrams must be drawn wherever necessary.
- Figure to right indicates full marks.
- Use of a non-programmable calculator is allowed.

		BLM	Marks	CLO No.
Q.1	Attempt any Two questions.		10	
A ✓	Find all combinations of truth values for p, q and r for which the statement $\neg p \leftrightarrow (q \wedge \neg(p \rightarrow r))$ is true.	L2	5	CLO1
B	Write the argument below in symbolic form. If the argument is valid, prove it. If the argument is not valid, give a counter example: "If I watch football, then I don't do mathematics" "If I do mathematics, then I watch hockey" \therefore "If I don't watch hockey, then I watch football"	L1	5	CLO1
C	Use known logical equivalences to show that $(\neg a \rightarrow b) \wedge (\neg b \vee (\neg a \vee \neg b))$ is logically equivalent to $\neg(a \leftrightarrow b)$. OR Find the PCNF & PDNF of the statement $(p \wedge r) \rightarrow p \wedge (\neg q \vee \neg r) \rightarrow \neg p$	L1	5	CLO1
Q.2	Attempt any two of the following.		10	
A ✓	Given a relation R on $A = \{1,2,3\}$ defined $R = \{(1,2), (2,3), (3,1)\}$, find the inverse relation R^{-1} . Verify if R and R^{-1} are symmetric, and discuss what this implies about their properties.	L3	5	CLO2
B	Determine whether the R on the set of all integers is reflexive, symmetric and transitive, where $(x,y) \in R$ if and only if $x \neq y$.	L2	5	CLO2
C ✓	Consider an example of two sets $A = \{9, 16, 25\}$ and $B = \{5, 4, 3, -3, -4, -5\}$. The relation is that the elements of A are the square of the elements of B. In set-builder form, $R = \{(x, y): x \text{ is the square of } y, x \in A \text{ and } y \in B\}$. find the Domain, Range and Codomain of the R	L2	5	CLO2

F \Rightarrow FET

**** End of Question Paper****

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		Revision: 00
		Date: 20/8/24
Class Test Examination		

Second Year B. Tech. (CSE/AIDS/AIML)
[OE1]DIGITAL LOGIC AND MICROPROCESSOR (UBTCE205A)
ODD/Even Semester (2024-25)

Total No. of Questions-2

Total No. of Printed Pages-1

[Time: 1 Hr. 00 min.]

[Max. Marks: 20]

PR	S	0	E	23	20	10	10	00	3
N									

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- v. Use of a non-programmable calculator is allowed.

		BTL	Marks	CLO No.
Q.1	Attempt the following.		10	
A	How many types of numbers system and what are they ?	L3		CLO1
	OR			
B	What are universal gates ? Explain how basic gates can realize using NAND or NOR gates	L2		CLO1
C	Explain binary to Gray & Gray to binary conversion with example?	L2		CLO1
	OR			
D	Implement and explain the working of full adder using basic gates.	L3		CLO2
Q.2	Attempt the following.		10	
A	Simplify the given expression $Y(A, B, C) = \sum m(0, 2, 3, 6, 7)$ to a minimal form.	L3		CLO1
	OR			
B	Find 1's and 2's Complement of 8 digit binary number 10101101.	L3		CLO1
C	Add the decimals 67 and 78 using excess-3 code.	L3		CLO1
	OR			
D	Minimize the function using K-map: $F(A, B, C) = \sum m(1, 2, 3, 5, 6, 7)$	L2		CLO1

**** End of Question Paper****

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		Revision: 00
		Date: 21/8/24

Class Test 1 Examination
Second Year B. Tech. (CSE/AIML/AIDS)
Python Programming (UBTCE2032)
ODD Semester (2024-25)

Total No. of Questions-2

Total No. of Printed Pages-01

[Time: 1 Hr. 00 min.]

[Max. Marks: 20]

PRN	S	O	E	23	20	10	10	00	3
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		Marks	BTL	CLO No.
Q.1	Attempt any two of the following.	10		
A ✓	Explain list slicing in python programming with example.	5	L2	CLO1
B	Explain all comparison operators in python programming with example.	5	L2	CLO1
C ✓	Differentiate between list and Set.	5	L4	CLO1
D	Write a python program to perform reverse string.	5	L6	CLO1
Q.2	Attempt any two of the following.	10		
A ✓	Write a python program to increment all the values of following list by 4. X=[10,20,30,40,50]	5	L6	CLO2
B ✓	Write a python program to print number from 1 to 1000 which are divisible by 3 using for loop.	5	L6	CLO2
C	Write a python program to print all Armstrong number from 1 to 100.	5	L6	CLO2
D ✓	Write a python program to perform bubble sort using loops.	5	L6	CLO2

****** End of Question Paper******



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Sate Maval, Pune

Record No.: ACAD/R/20

Revision: 00

Date: 26/8/24

Class Test Examination

**Second Year B. Tech. (CSE/AIML/AIDS)
Operating System (UBTCE208/PCC)
ODD Semester (2024-25)**

Total No. of Questions-2

Total No. of Printed Pages-XX

[Time: 1 Hr. 00 min.]

[Max. Marks: 20]

PRN	S	O	E	23	20	10	10	00	3
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		Marks	CLO No.																		
Q.1	Attempt the following.	10																			
A	Discuss Operating System and its various functions along with objectives.	5	1																		
B	Explain Linux OS and eight commands.	5	1																		
	OR																				
A	✓ Explain evolution of Operating System.	5	1																		
B	✓ Describe virtual machines along with working and advantages.	5	1																		
Q.2	Attempt any two of the following.	10																			
A	✓ Explain Process and PCB in details.	5	2																		
B	✓ Explain CPU Scheduling along with any scheduling algorithm.	5	2																		
	OR																				
A	Explain Inter-process Communication, Shared Memory and Message passing.	5	2																		
B	Consider the set of 4 processes whose arrival time and burst time are given below-	5	2																		
	<table border="1"> <thead> <tr> <th>Processes</th> <th>Arrival Time</th> <th>Burst Time</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>2</td> <td>1</td> </tr> <tr> <td>P2</td> <td>1</td> <td>5</td> </tr> <tr> <td>P3</td> <td>4</td> <td>1</td> </tr> <tr> <td>P4</td> <td>0</td> <td>6</td> </tr> <tr> <td>P5</td> <td>2</td> <td>3</td> </tr> </tbody> </table>	Processes	Arrival Time	Burst Time	P1	2	1	P2	1	5	P3	4	1	P4	0	6	P5	2	3		
Processes	Arrival Time	Burst Time																			
P1	2	1																			
P2	1	5																			
P3	4	1																			
P4	0	6																			
P5	2	3																			

If the CPU scheduling policy is FCFS, calculate the average waiting time and average turnaround time

**** End of Question Paper****



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Sate Maval, Pune

Record No.:
ACAD/R/20

Revision: 00

Date: 22/08/2024

Class Test Examination

Second Year B. Tech. (CSE/AIMI/AIDS)

Course Name Data Structures and Algorithms (UBTCE201/PCC)

ODD Semester (2024-25)

Total No. of Questions-2

Total No. of Printed Pages-XX

[Time: 1 Hr. 00 min.]

[Max. Marks: 20]

PRN	3	0	E	23	20	10	10	00	3
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		Marks	CLO No.
Q.1	Attempt the following.	10	
A ✓	Calculate frequency count for Void fun(int a[] [], int b[] []) { int c[3][3]; for (i=0;i<m; i++) { for (j=0;j<n; j++) { c[i][j]= a[i][j] + b[i][j]; } } }	5	01
B ✓	Define algorithm? Explain in detail characteristics of algorithm? OR	5	01
A.	List and explain types of Data Structures.	5	01
B.	What are the different problem-solving steps.	5	01
Q.2	Attempt any two of the following.	10	
A ✓	Consider the given infix expression $a * b + z / c$. Write its postfix expression. Illustrate infix to postfix conversion with proper representation.	5	03
B ✓	Consider a stack of size 6. Five elements P, Q, R, X, Y, Z are added to the stack. Show the contents of the stack: (i) Three elements pushed into the stack. (ii) two elements are popped (iii) All elements are popped from the stack. (iv) display stack. OR	5	03
A	Write Pseudo code for Push () and POP () operations on stack.	5	03
B	State and Explain applications of queue. How to implement queue with an array?	5	03