Name:

Roll No:

Rajagiri College of Social Sciences (Autonomous)
Continuous Assessment Examination - II
October 2022
I MCA

Code: MCA101 **Total Time : 90 minutes**

Sub: Probability, statistics and computational mathematics

Total Mark : 40

Level	Blooms Taxonomy Levels of Learning
L1	Remembering
L2	Understanding
L3	Applying
L4	Analyzing
L5	Evaluating
L6	Creating

SECTION A

Each question has 10 Marks

Sl. no	Question	CO Mapped	Bloom's Taxonomy level
1	a) Your basketball team is playing a series of 5 games against your opponent. The winner is those who wins more games (out of 5). Let assume that your team is much more skilled and has 75% chances of winning. It means there is a 25% chance of losing. What is the probability of your team get 3 wins? b) Find the mean of a Poisson distribution.	MCA101.2	L2
2	Find the median for the following data.		

P.T.O

Class interval	Frequency
40 – 44	1
45 – 49	5
50 – 54	9
55 – 59	12
60 – 64	7
65 – 69	2

OR

3 Prove that Poison distribution is a limiting case of Binomial distribution.

SECTION B

Each question has 10 marks

4 Find the correlation coefficient between the data given below. MCA101.3 L3

ROLL NO	Mark in Physics	Mark in chemistry
1	48	45
2	35	20
3	17	40
4	23	25
5	47	45

5 Calculate a regression equation Y on X.

price	10	12	13	12	16	15
demand	40	38	43	45	37	43

OR

6 a) Prove that the given expression is tautology.
$[(p \vee q) \wedge (p \rightarrow r) \wedge (q \rightarrow r)] \rightarrow r$

b) State and prove Demorgan's law.

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Code: MCA104 **Total Time : 90 minutes**

Sub: Data Communications and Computer Networks **Total Marks : 40**

Level	Blooms Taxonomy Levels of Learning
L1	Remembering
L2	Understanding
L3	Applying
L4	Analyzing
L5	Evaluating
L6	Creating

Sl.no	Question	CO Mapped	Bloom's Taxonomy level
	SECTION A *Each question has 10 marks*		
1	A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x4+x+1. What is the actual bit stream transmitted? – **Embedded Question**	MCA10(3).1	L3
2	Explain the Go-Back N protocol in detail.		
	OR		
3	Discuss the Channelization Protocols.		
	SECTION B *Each question has 10 marks*		
4	Explain the various routing algorithms in computer networks– **Embedded Question**	MCA104(4).1	L2
5	Illustrate the controlled access protocols in detail.		
	OR		
6	Discuss the frame format of IEEE 802.3 in detail.		

Name: Anya

Roll No: 24

Rajagiri College of Social Sciences (Autonomous)
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Code: MCA102 **Total Time : 90 minutes**

Sub: Data Structures Using C **Total Marks : 40**

Level	Blooms Taxonomy Levels of Learning
L1	Remembering
L2	Understanding
L3	Applying
L4	Analyzing
L5	Evaluating
L6	Creating

SECTION A

Each question has 10 marks

Sl.no	Question	CO Mapped	Bloom's Taxonomy level
1	Implement a doubly linked list for insertion, deletion, and displaying of elements.	MCA102.3	L3
2	Explain the two methods for storing a graph on a computer with merits and demerits.		
	OR		
3	Implement the operations of a circular linked list.		

SECTION B

Each question has 10 makrs

4	Apply a binary search tree to display the elements in the sorted order without using recursion.	MCA102.4	L3
5	Explain Threaded Binary Tree with its practical application		
	OR		
6	Explain the different rotations performed in AVL trees.		

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November 2022
I MCA

Code: MCA105 **Total Time: 90 minutes**

Sub: Operating System with Linux as Case Study

Total Marks : 40

Level	Blooms Taxonomy Levels of Learning
L1	Remembering
L2	Understanding
L3	Applying
L4	Analyzing
L5	Evaluating
L6	Creating

SECTION A
Each question has 10 marks

Sl.no	Question	CO Mapped	Bloom's Taxonomy level
1	Find the average waiting time of the following processes using SJF CPU scheduling (Preemptive) Process / Arrival Time / Burst Time P1 / 0 / 6 P2 / 1 / 4 P3 / 2 / 2 P4 / 3 / 3	MCA105.3	L2
2	Substantiate that multithreading achieves parallelism and improve performance of the applications. Also explain which are the different multithreading models?		
	OR		
3	Elucidate **exec** family with the code snippet?		

SECTION B

Each question has 10 marks

4	If a new request from P1 arrives for the resources A, B, C, D are (1,1,0,0) on given below scenario; then will the system be in a safe state if it is granted using Banker's Algorithm?	MCA105.4	L2

Process	Allocation				Maximum				Available			
	A	B	C	D	A	B	C	D	A	B	C	D
P0	2	0	0	1	4	2	1	2	3	3	2	1
P1	3	1	2	1	5	2	5	2				
P2	2	1	0	3	2	3	1	6				
P3	1	3	1	2	1	4	2	4				
P4	1	4	3	2	3	6	6	5				

5	5. Describe in detail solutions to the Critical Section Problem.		
	OR		
6	Explain: a. Deadlock b. Shell Scripting c. Code snippet of simple solution to Dining Philosophers Problem		