Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MCAP106

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Supplementary End Semester Examinations, March - 2025

FULL STACK WEB DEVELOPMENT

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.No 1 to 5 answer either A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Explain Frames and Frameset and write a program to create a college website using frameset.	12M	1	4
	OR			
Q.1(B)	i) Design a website form for a student registration using CSS.	6M	1	3
	ii) Create a table using Responsive CSS. When the mouse moves over the table column the color must be changed. Write example program.	6M	1	2
Q.2(A)	Define Function. Explain the implementation of JavaScript function with an example program	12M	2	4
	OR			
Q.2(B)	i) Explain in detail The concept of Java script Arrays with example.	6M	2	3
	ii) Discuss Java script conditional construct with example	6M	2	2
Q.3(A)	List and explain the Features of Angular JS.	12M	3	4
	OR			
Q.3(B)	Discuss the Angular JS Animations.	12M	3	3
Q.4(A)	Elaborate in detail the REPL Terminal in Node JS	12M	4	4
	OR			
Q.4(B)	What is the Purpose of Buffer Class in Node? How to write and read the data from buffer? Explain	12M	4	2
Q.5(A)	Write a simple MySQL program for updating and deleting the records from database	12M	5	3
	OR			
Q.5(B)	Explain the following in Node JS with neat syntax: i. Writing a File ii. Reading a File iii. Closing a File	12M	5	4

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MCAP107

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

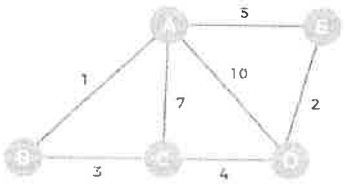
MCA I Year II Semester (R22) Supplementary End Semester Examinations, March - 2025

DATA STRUCTURES AND ALGORITHMS

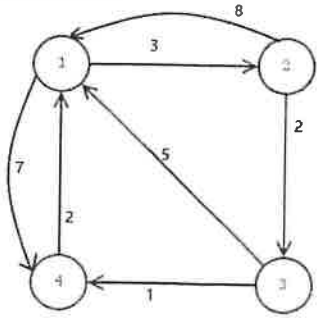
Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.No 1 to 5 answer either A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	What is meant by asymptotic notations? Explain the asymptotic notations in details	12M	1	2
	OR			
Q.1(B)	Define Queue. Implement various operations on the queue with examples.	12M	1	2
Q.2(A)	What is the difference between array based representation and linked list representation. Write an algorithm to insert a node at beginning in a single linked list.	12M	2	2
	OR			
Q.2(B)	What is linked list? Discuss the sparse matrix representation using linked list with example	12M	2	2
Q.3(A)	What is a Binary Tree? Explain various binary tree traversal techniques with an example for each.	12M	3	2
	OR			
Q.3(B)	What is Minimum Spanning Tree? Use Kruskal's algorithm to find the minimum spanning Tree of the given graph.	12M	3	3



Q.4(A)	What is hashing? How to do indexing and retrieving items using open addressing explain with an example?	12M	4	2
	OR			
Q.4(B)	What is Divide and Conquer technique? Explain with an example how merge sort algorithm uses divide and conquer approach to sort given set of elements.	12M	4	2
Q.5(A)	What do you understand by backtracking? Demonstrate the 4-Queens problem using backtracking.	12M	5	3
	OR			
Q.5(B)	Describe Dynamic Programming and Illustrate All pair shortest path problem for the following graph.	12M	5	3



*** END***

Hall Ticket No: | | | | | | | | | | | Question Paper Code: 22MCAP108

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Supplementary End Semester Examinations, March - 2025

SOFTWARE ENGINEERING

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.no 1 to 5 answer either A or B only. Q.no 6 which is a case study is compulsory.

Q.No.	Question	Marks	CO	BL
Q.1 (A)	(i)Explain Types of Software and its Characteristics.	6M	1	2
	(ii) Write short notes on Rational Unified Process.	6M	1	2
	OR			
Q.1 (B)	Explain Waterfall and Spiral Process models in Detail.	12 M	1	3
Q.2 (A)	Explain Requirement Engineering Process in Detail.	12M	2	3
	OR			
Q.2 (B)	Write Short Notes on Data model and Object Model with example.	12M	2	2
Q.3 (A)	Explain Coupling and cohesion with all its Types.	12M	3	3
	OR			
Q.3 (B)	What is UML? Explain all the UML diagrams with Example Application.	12M	3	3
Q.4 (A)	Explain White box and Block box Testing Strategies.	12M	4	3
	OR			
Q.4 (B)	What is Metrics? Explain all the Process and Product Metrics.	12M	4	2
Q.5 (A)	Write short Notes on Software reliability and Software Reuse.	12M	5	3
	OR			
Q.5 (B)	What is Software Maintenance? Explain all its Types.	12M	5	2

***** END*****

Hall Ticket No: | | | | | | | | | | |

Question Paper Code: 22MCAP109

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Supplementary End Semester Examinations, March - 2025

CYRPTOGRAPHY AND NETWORK SECURITY

Time: 3Hrs **Max Marks: 60**

Attempt all the questions. All parts of the question must be answered in one place only.
In Q.No 1 to 5 answer either A or B only

Q.No	Question	Marks	CO	BL
Q.1(A)	Differentiate between active attacks and passive attacks.	12M	1	4
	OR			
Q.1(B)	State the Shannon's theory of confusion and diffusion.	12M	1	2
Q.2(A)	Express the Chinese Remainder theorem in asymmetric ciphers.	12M	2	2
	OR			
Q.2(B)	Elucidate the RSA algorithm in cryptography network security.	12M	2	2
Q.3(A)	Describe the authentication requirements and its functions.	12M	3	2
	OR			
Q.3(B)	Explain about digital signature standards (DSS) with examples.	12M	3	2
Q.4(A)	Construct the key distribution concept of symmetric and public.	12M	4	3
	OR			
Q.4(B)	Determine public key distribution (PKI) in key distribution techniques.	12M	4	5
Q.5(A)	Write the concept of IP security architecture.	12M	5	2
	OR			
Q.5(B)	Illustrate the idea of intrusion and detection system.	12M	5	4

***** END*****