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

Question Paper Code: 22MCAP106

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Regular End Semester Examinations, August - 2023

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 Table tag in Html, and Write a program for creating a Time Table for your Class using table tag.	12M	1	4
	OR			
Q.1(B)	Define List. Explain the different types of Lists with example code	12M	1	3
Q.2(A)	Define Function. Explain the implementation of JavaScript function with an example program	12M	2	3
	OR			
Q.2(B)	i) Explain in detail The concept of Java script Arrays with example. ii) Discuss Java script conditional construct with example.	12M	2	3
Q.3(A)	Describe the Angular Expressions in detail.	12M	3	4
	OR			
Q.3(B)	Explain the Dependency Injection and Series in Angular JS.	12M	3	3
Q.4(A)	i) Explain the Features of Node JS. ii) Write the steps to create a Node JS Application with neat syntax.	12M	4	2
	OR			
Q.4(B)	Define Web Server. Explain how to create a web server using Node and make a request to Node JS Server.	12M	4	4
Q.5(A)	How to update and delete the records in MySQL database using Node JS, explain with simple program	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	2

***** END*****

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

Question Paper Code: 22MCAP107

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

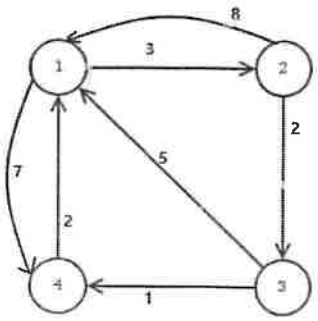
MCA I Year II Semester (R22) Regular End Semester Examinations, August - 2023

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)	Define space complexity and time complexity? Explain about asymptotic notations.	12M	1	2
	OR			
Q.1(B)	Define Stack. Implement various operations performed on the stack and explain with examples.	12M	1	3
Q.2(A)	What is linked list? Write and explain the algorithm for create, insertion and traverse operations in singly linked list with example	12M	2	2
	OR			
Q.2(B)	Illustrate the implementation of Polynomial Addition using linked list	12M	2	2
Q.3(A)	Explain Binary Search Tree. Construct Binary Search Tree for the following keys: 20, 85, 63, 26, 53, 19, 21, 49, 10, 55, 12, 72, 50. Perform In-order, Pre-order and Post-order Tree Traversals on the constructed Binary Search Tree.	12M	3	3
	OR			
Q.3(B)	Define Graph. Explain graph traversals methods with example for each.	12M	3	2
Q.4(A)	Explain the collision resolution techniques available for hashing in detail.	12M	4	2
	OR			
Q.4(B)	Implement Bubble sort and Insertion sort with suitable examples.	12M	4	2
Q.5(A)	Explain in detail about 4-queen problem using backtracking method.	12M	5	2
	OR			
Q.5(B)	Describe Dynamic Programming and Illustrate All pair shortest path problem for the following graph.	12M	5	3



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

Question Paper Code: 22MCAP108

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Regular End Semester Examinations, August - 2023

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	Question	Marks	CO	BL
Q.1(A)	Illustrate process attributes and any one process model with neat diagram.	12M	1	2
	OR			
Q.1(B)	Define Software Engineering. Explain types of Software and its Characteristics.	12M	1	2
Q.2(A)	Examine why feasibility study is important in software engineering process.	12M	2	4
	OR			
Q.2(B)	Analyze requirement elicitation activities for your own project with step by step activities.	12M	2	4
Q.3(A)	Explain UML Class diagram and Use case diagram with example.	12M	3	4
	OR			
Q.3(B)	Distinguish between coupling and cohesion in software engineering.	12M	3	4
Q.4(A)	Compare White box and Block box Testing Strategies.	12M	4	2
	OR			
Q.4(B)	Summarize integration testing and regression testing.	12M	4	2
Q.5(A)	Explain software maintenance and categorization of maintenance.	12M	5	2
	OR			
Q.5(B)	Illustrate the idea of a software quality management system in detail.	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) Regular End Semester Examinations, August - 2023

CRYPTOGRAPHY 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)	Define a Security attack. Explain in detail about the various types of attacks an Internetwork is vulnerable to.	12M	1	3
	OR			
Q.1(B)	Illustrate the functioning of AES algorithm with a neat sketch	12M	1	4
Q.2(A)	Address Principles of Public key crypto systems. And apply encryption and decryption process of RSA algorithm for p=3,q=11,e=7 and M=5. Explain RSA algorithm with step wise.	12M	2	4
	OR			
Q.2(B)	Discuss in detail about primality testing and Chinese Remainder Theorem.	12M	2	2
Q.3(A)	How digital Signatures will generate? Elaborate digital signature standards	12M	3	3
	OR			
Q.3(B)	Demonstrate usage of Cryptographic hash functions for Message Authentication code.	12M	3	3
Q.4(A)	Analyze the strength of Diffie-Hellman Key exchange protocol with a flow chart.	12M	4	4
	OR			
Q.4(B)	How does Secure Multipurpose Internet Mail Extensions(S/MIME) work? Elaborate in detail	12M	4	4
Q.5(A)	How does and IDS work? Illustrate functioning of various IDS briefly.	12M	5	2
	OR			
Q.5(B)	Discuss in detail about SSL and SET with proper examples.	12M	5	3

***** END*****

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

Question Paper Code: 22MCAP110

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Regular End Semester Examinations, August - 2023

ARTIFICIAL INTELLIGENCE

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 How Artificial Intelligence Applications are related to Real World	12M	1	3
	OR			
Q.1(B)	Explain about various Constraint satisfaction problems?	12M	1	3
Q.2(A)	Examine how NLP is Useful for Enterprise Applications?	12M	2	4
	OR			
Q.2(B)	Discuss about Chatbot and explain the architecture of chatbot ?	12M	2	2
Q.3(A)	Identify the Purpose of Optical Character Recognition and its Applications in Real time?	12M	3	3
	OR			
Q.3(B)	Explain Various Phases of Image Processing with a Neat Sketch	12M	3	3
Q.4(A)	What is RL and explain its applications ?	12M	4	2
	OR			
Q.4(B)	Explain Various Types of AI agents and analyze How agent will interact with the Environment?	12M	4	3
Q.5(A)	Analyze the Role of AI for smart applications such as smart cities and smart manufacturing ?	12M	5	4
	OR			
Q.5(B)	How artificial intelligence's smart applications like smart grids and smart agriculture are applied in real life?	12M	5	2

***** END*****

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

Question Paper Code: 22MCAP401

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Regular End Semester Examinations, August - 2023

MACHINE LEARNING – ALGORITHMS AND APPLICATIONS

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 the Types of Machine Learning with neat Diagrams.	12 M	1	3
	OR			
Q.1(B)	Write short notes on Maximum likely wood hypothesis and least squared error hypothesis.	12 M	1	2
Q.2(A)	Briefly describe a note on Decision Tree with an example and neat a diagram.	12M	2	3
	OR			
Q.2(B)	What is Genetic Algorithm? Explain Crossover and mutation with examples for each.	12M	2	3
Q.3(A)	Discuss Bellman Equation and Explain Markov Decision Process in detail.	12M	3	5
	OR			
Q.3(B)	Describe the Components and Application of Reinforcement Learning.	12M	3	3
Q.4(A)	Explain Partition based clustering with all its Types.	12M	4	3
	OR			
Q.4(B)	Explain the Hierarichal Clustering with its all types.	12M	4	3
Q.5(A)	What is Perceptron? Explain its types.	12M	5	2
	OR			
Q.5(B)	Discuss Generative adversarial Networks and its applications.	12M	5	2

***** END*****

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

Question Paper Code: 22MCAP403

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R22) Regular End Semester Examinations, August - 2023

AGILE SOFTWARE DEVELOPMENT PROCESS

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		Marks	CO	BL
Q.1(A)	Differentiate the characteristics of SSAD and OOAD.	12M	1	2
	OR			
Q.1(B)	Describe the basics of object orientation and with examples.	12M	1	3
Q.2(A)	Explain various UML Building blocks with neat diagram.	12M	2	4
	OR			
Q.2(B)	Describe the following terms with example i. Classes ii. Relationships	12M	2	2
Q.3(A)	Explain the principles and benefits of Agile Development.	12M	3	4
	OR			
Q.3(B)	i. What are the characteristics of Agile Manifesto? ii. Describe various Agile Roles	12M	3	5
Q.4(A)	Describe Agile Framework with neat sketch.	12M	4	4
	OR			
Q.4(B)	Write short notes on i. Scrum ii. EVO	12M	4	4
Q.5(A)	Describe the structure of Continuous delivery and Continuous Integration in Devops.	12M	5	5
	OR			
Q.5(B)	Explain how to design organization and its architecture outcomes by integrating operations.	12M	5	4

***** END*****