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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations –
October 2022

JAVA PROGRAMMING

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)	Write a java program to develop the banking application with following criteria a) Balance b) Deposit c) Withdrawal d) Account Holder Details	12	1	3
OR				
Q.1(B)	Explain public static void main (String args[]) and Why is main method declared as static in java?	12	1	2
Q.2(A)	Explain the role of the following: a) Non-parameterized constructor b) Parameterized constructor c) Copy constructor.	12	2	2
OR				
Q.2(B)	Write a program to create a class Student with data 'name, city and age' along with method named 'printData' to display the data. Create the two objects s1, s2 to declare and access the values.	12	2	2
Q.3(A)	Write a java program to copy content to a file and read the content from the file and display it on the screen.	12	3	3
OR				
Q.3(B)	Explain the different types of operations on a file.	12	3	2
Q.4(A)	What are the Built-In Exceptions and explain the role of java.lang Exceptions in java with examples.	12	4	2
OR				
Q.4(B)	Discuss the concept of try, catch and finally blocks by applying the concept of Array index out of bounds exception.	12	4	2
Q.5(A)	Explain the concept of Input and Message Dialog boxes with examples.	12	5	2
OR				
Q.5(B)	Create a java swing program and implement Border Layout.	12	5	2

*** END***

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

**MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations –
October 2022**

Database Management Systems

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)	Draw ER diagram for Hospital Management System (Use DOCTOR, PATIENT, HOSPITAL and MEDICAL_RECORD Entity). Identify Primary Key and Foreign Key.	12M	1	3
OR				
Q.1(B)	Write about database system applications.	12M	1	2
Q.2(A)	Explain the fundamental operations of Relational Algebra with an example.	12M	2	2
OR				
Q.2(B)	Explain the date functions in SQL with an example.	12M	2	2
Q.3(A)	(a) What is BCNF?	6M	3	1
	(b) Explain how the modification anomalies are satisfied in BCNF?	6M	3	1
OR				
Q.3(B)	Explain the following with an example.			
	(a) Lossy decomposition	6M	3	2
	(b) Non loss decomposition	6M	3	2
Q.4(A)	Explain about Lock based concurrency control mechanism.	12M	4	2
OR				
Q.4(B)	(a) Explain ACID properties of transaction.	6M	4	2
	(b) Explain Conflict serializability	6M	4	2
Q.5(A)	(a) What is a Trigger?	6M	5	1
	(b) Explain about triggers in PL/SQL with example.	6M	5	2
OR				
Q.5(B)	Write about character functions in SQL with example.	12M	5	1

*** END***

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations –
October 2022

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)	Illustrate the various operations performed on the stack with examples.	12M	1	4
	OR			
Q.1(B)	Write a program to implement the operations (insert, delete, search) on circular linked list.	12M	1	3
Q.2(A)	Explain Binary search algorithm with example and also find its time complexity.	12M	2	2
	OR			
Q.2(B)	Distinguish between Quick sort and Merge sort, and arrange the following numbers in increasing order using merge sort. (18, 29, 68, 32, 43, 37, 87, 24, 47, 50)	12M	2	3
Q.3(A)	What is Minimum Spanning Tree? Use Kruskal's algorithm to find the minimum spanning Tree of the given graph.	12M	3	4
	OR			
Q.3(B)	What is AVL? Explain the types of rotations in AVL with example trees.	12M	3	2
Q.4(A)	Define Graph. Explain the Graph Traversal Methods with Example.	12M	4	2
	OR			
Q.4(B)	Illustrate how the collision in hashing can be resolved by Open Addressing with an example.	12M	4	4
Q.5(A)	Find an optimal solution for 0/1 knapsack problem using following details: Number of objects n=4, Knapsack capacity M=5, Weights (w1, w2, w3, w4) = (2,3,4,5) & Profit (p1, p2, p3, p4) = (3,4,5,6)	12M	5	3
	OR			
Q.5(B)	Explain in detail about 4-queen problem using backtracking method.	12M	5	3

*** END***

Hall Ticket No:

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Question Paper Code: 20MCAP109

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

**MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations –
October 2022**

BLOCKCHAIN TECHNOLOGY

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)	Write a note on (i) Digital Certificate (ii) Certifying Authority	12M	1	1
OR				
Q.1(B)	Write briefly about the importance of Hash Algorithm in Blockchain Technology.	12M	1	2
Q.2(A)	Elaborate the uses of Fault Tolerance in Distributed environment and its implementation	12M	2	2
OR				
Q.2(B)	Explain the concept of Hadoop Distributed File System and its role in blockchain technology.	12M	2	1
Q.3(A)	Explain the importance of Block chain technology in supply chain management.	12M	3	2
OR				
Q.3(B)	Explain briefly about the conventional distributed database and its advantages.	12M	3	2
Q.4(A)	Write a note on: (i) DAO (ii) Smart Contract	12M	4	1
OR				
Q.4(B)	Explain briefly about the Proof of Work in the Distributed consensus.	12M	4	2
Q.5(A)	What is Smart Contract and explain about some of the attacks on smart contracts.	12M	5	1
OR				
Q.5(B)	Explain the application of blockchain in Medical Record Management System in detail.	12M	5	2

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**MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations –
October 2022**

Artificial Intelligence Techniques 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 about artificial intelligence and discuss its applications in various fields.	12M	1	2
OR				
Q.1(B)	What do you mean by machine learning? Describe types and applications of machine learning.	12M	1	2
Q.2(A)	What is NLP? What are the components of NLP? Elaborate its challenges.	12M	2	1
OR				
Q.2(B)	Illustrate about virtual assistants and their models.	12M	2	2
Q.3(A)	Define noise. Explain types of noises and their models to filter with suitable sketch.	12M	3	1
OR				
Q.3(B)	How feature extraction is useful in computer vision? Portray about edge detection in computer vision.	12M	3	2
Q.4(A)	List the applications of reinforcement learning.	12M	4	3
OR				
Q.4(B)	What is meant by reinforcement learning? Illustrate with example.	12M	4	1
Q.5(A)	How artificial intelligence is used in smart vehicles? Explain.	12M	5	2
OR				
Q.5(B)	Why artificial intelligence is important for smart city? Deliberate.	12M	5	2

*** END***

Hall Ticket No:

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Question Paper Code: 20MBAP302

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations – October 2022

DESIGN THINKING

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)	Analyse the Principles of Design Thinking	12M	1	4
OR				
Q.1(B)	What are the internal and external components of SWOT Analysis?	12M	1	1
Q.2(A)	How does empathy assessment tools are used to assess the empathy?	12M	2	2
OR				
Q.2(B)	Can you give brief on decision making process and research components	12M	2	3
Q.3(A)	Describe about the innovation and creativity of design thinking.	12M	3	2
OR				
Q.3(B)	What is the contribution of Role Play in design thinking?	12M	3	1
Q.4(A)	Evaluate the criteria for Idea Ranking	12M	4	5
OR				
Q.4(B)	Write down the methods of market testing.	12M	4	1
Q.5(A)	Illustrate that Design Thinking is a Team Sport	12M	5	2
OR				
Q.5(B)	How can you perform Business Model Presentation with an example?	12M	5	6

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Hall Ticket No:

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Question Paper Code: 20MBAP303

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)

MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations – October 2022

Management Information Systems

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 process of Management with their information needs.	12M	1	2
	OR			
Q.1(B)	Define Management Information System. What are the key components of MIS.	12M	1	2
Q.2(A)	Explain in detail about the data in traditional file environment.	12M	2	1
	OR			
Q.2(B)	Explain how databases improve business performance in decision making?	12M	2	2
Q.3(A)	Discuss briefly the various steps in developing and implementing an Information System.	12M	3	1
	OR			
Q.3(B)	Discuss various steps involved in the conceptual design of a system	12M	3	2
Q.4(A)	What are the Components of Decision Support System (DSS)?	12M	4	2
	OR			
Q.4(B)	Describe security and control issues in MIS.	12M	4	1
Q.5(A)	What do you understand by term MIS? Discuss various activities performed by MIS in an organization.	12M	5	2
	OR			
Q.5(B)	Illustrate the computer crimes and privacy issues in MIS.	12M	5	2

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MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA I Year II Semester (R20) Regular & Supplementary End Semester Examinations – October 2022
E-Commerce & Digital Markets [Open Elective]

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)	Outline E-Commerce? How does it work? Discuss in detail about business models with suitable examples.	12M	1	2
OR				
Q.1(B)	Paraphrase various cross functional enterprise systems and applications in information technology.	12M	1	2
Q.2(A)	Summarize E commerce enablers? Defend Is Amazon an E-Commerce enabler.	12M	2	5
OR				
Q.2(B)	Label the role of internet among E-Commerce and discuss about its impact on business strategy pre and post covid19 pandemic.	12M	2	2
Q.3(A)	Point out the need and importance of Customer Relationship Management in globalized era.	12M	3	4
OR				
Q.3(B)	Describe SCM? Demonstrate the practices and its stages in a logistic company.	12M	3	3
Q.4(A)	Classify the types of Auctions in E-Commerce.	12M	4	2
OR				
Q.4(B)	Describe E-Tailing advantages and disadvantages.	12M	4	2
Q.5(A)	Illustrate the impact of E-Business in the pre and post COVID 19 era.	12M	5	4
OR				
Q.5(B)	Infer the success factors of E-Markets in current scenario.	12M	5	4

***** END*****