MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
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)	i) Explain the Structure of HTML Program with neat diagram.	6M	1	2
	ii) What is IMG tag? What are the attributes that can be used with IMG tag? Give an example.	6M	1	2
	OR			
Q.1(B)	Explain the 2D transformations in detail with example programs.	12M	1	2
Q.2(A)	Explain the loops available in java script with suitable examples.	12M	2	2
	OR			
Q.2(B)	What is Bootstrap? Discuss the bootstrap Grids in details with example.	12M	2	2
Q.3(A)	What is Angular Expression? Explain the key difference between angular expressions and JavaScript expressions.	12M	3	2
	OR			
Q.3(B)	i) What is the module in AngularJS? Illustrate with an example.	6M	3	2
	ii) What are the directives in AngularJS? Give suitable example.	6M	3	2
Q.4(A)	Define Event Emitter and discuss its methods with example.	12M	4	3
	OR			
Q.4(B)	Explain about Node JS File system and its Methods with example.	12M	4	2
Q.5(A)	How to connect node.js with MySQL database? Explain with an example code.	12M	5	2
	OR			
Q.5(B)	How to create a table in Node.js database? Create a table for Student information and print the content using select Query.	12M	5	3

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
DATA SCIENCE

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)	Discuss about skewness with suitable diagram and example.	12M	1	4
	OR			
Q.1(B)	List the importance of data science. How data science is helpful to explore business objectives? Describe.	12M	1	3
Q.2(A)	Explain association rule based apriori algorithm with suitable example.	12M	2	2
	OR			
Q.2(B)	Why is hierarchical clustering said to be unsupervised learning? Discuss in detail about agglomerative clustering.	12M	2	3
Q.3(A)	Define classification. How logistic regression is useful for classification problem? Describe	12M	3	2
	OR			
Q.3(B)	Explain the Validation methods for Multiple Linear Regression.	12M	3	4
Q.4(A)	Compare auto regression model with moving average model with an Illustration.	12M	4	3
	OR			
Q.4(B)	Mention any eight differences between ARMA (p,q) model and MA(q) model.	12M	4	4
Q.5(A)	List the dissimilarity between single layer perceptron with multi-layer perceptron with suitable diagram.	12M	5	4
	OR			
Q.5(B)	What is meant by feed backward neural network? How feed backward neural network used in back propagation neural network? Illustrate.	12M	5	3

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
CLOUD COMPUTING

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 Cloud Computing? Explain in detail about the necessity and evolution of Cloud Computing.	12M	1	1
	OR			
Q.1(B)	Explain in detail about the following: a. Grid Computing characteristics, advantages and disadvantages. b. Cluster Computing characteristics, advantages and disadvantages.	6+6M	1	2
Q.2(A)	What are the features and characteristics of Microsoft Azure platform?	12M	2	6
	OR			
Q.2(B)	Explain in detail about various cloud service models.	12M	2	4
Q.3(A)	a. What is Virtualization? What are the types of virtualization techniques? b. Explain in detail about various parameters that control the resources consumed by a virtual machine.	6+6M	3	3
	OR			
Q.3(B)	What is Virtual machine provisioning? Explain.	12M	3	1
Q.4(A)	What is the need for SLA? Explain in detail about how to meet SLA Commitments.	12M	4	5
	OR			
Q.4(B)	What is cloud data management? Explain.	12M	4	3
Q.5(A)	Explain in detail about need of security in Cloud Computing.	12M	5	2
	OR			
Q.5(B)	What are various access specifications provided for cloud users? Explain.	12M	5	1

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
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)	Explain classical Encryption techniques in detail.	12M	1	5
	OR			
Q.1(B)	How AES is used for encryption/decryption? Discuss with example.	12M	1	1
Q.2(A)	Define Euler's theorem and its applications?	12M	2	1
	OR			
Q.2(B)	Classify the RSA algorithm in detail with example.	12M	2	2
Q.3(A)	What is Hash function? Compare MAC and Hash function.	12M	3	1
	OR			
Q.3(B)	Explain in detail about Digital Signatures?	12M	3	5
Q.4(A)	Define Kerberos. What are the four requirements defined by Kerberos?	12M	4	1
	OR			
Q.4(B)	What is MIME content type? Explain	12M	4	1.
Q.5(A)	Explain the architecture of IP Security.	12M	5	2
	OR			
Q.5(B)	Demonstrate trusted system in detail.	12M	5	2

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
DATA WAREHOUSING AND DATA MINING

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)	i) Explain data mining as a step process of knowledge discovery.	8M	1	2
	ii) Mention the functionalities of Data mining.	4M	1	1
	OR			
Q.1(B)	i) Explain the various Data pre-processing techniques.	8M	1	2
	ii) How data reduction helps in data pre-processing.	4M	1	1
Q.2(A)	With a neat sketch, Explain three tier architecture of data ware housing.	12M	2	3
	OR			
Q.2(B)	How to implement the Dataware houses? Explain.	12M	2	1
Q.3(A)	i) How to evaluate the classifier accuracy?	4M	3	1
	ii) What is prediction? Explain the various prediction techniques.	8M	3	1
	OR			
Q.3(B)	i) Discuss the issues regarding classification and prediction.	8M	3	3
	ii) Write Sequential Covering algorithm.	4M	3	1
Q.4(A)	i) Describe the requirements of clustering in Data mining.	8M	4	2
	ii) Suppose that the data mining task is to cluster points into three clusters, where the points are A1(2,10), A2(2,5), A3(8,4), B1(5,8), B2(7,5), B3(6,4), C1(1,2), C2(4,9). The distance function is Euclidean distance. Suppose initially we assign A1, B1, C1 as the center of each cluster, respectively. Use the k-means algorithm to show only 1) The three cluster centers after first round of execution. 2) The final three clusters.	4M	4	3
	OR			
Q.4(B)	i) Write a note on classification of clustering methods.	8M	4	1
	ii) Provide the pseudo code of the OPTICS algorithm.	4M	4	4
Q.5(A)	i) What are methods of mining spatial data?	4M	5	1
	ii)What are the challenges for effective resource and knowledge discovery in mining the World Wide Web?	8M	5	1
	OR			
Q.5(B)	i) How does multimedia mining perform similarity search in multimedia data?	8M	5	2
	ii) What are some common data preparation operations you would use for Time Series data?	4M	5	1

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE

(UGC-AUTONOMOUS)

MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022

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	Question	Marks	CO	BL
Q.1(A)	Explain Unified Process life cycle with the help of a diagram.	12M	1	2
	OR			
Q.1(B)	Explain the various approaches to system development in detail.	12M	1	2
Q.2(A)	Explain about UML Building Blocks in detail.	12M	2	1
	OR			
Q.2(B)	Articulate the Common Mechanisms in UML with suitable examples.	12M	2	2
Q.3(A)	How measurement helps in monitoring the progress in Agile approach? Discuss.	12M	3	3
	OR			
Q.3(B)	Explain various roles in Agile process. How are these roles different from traditional roles?	12M	3	2
Q.4(A)	Explain Life cycle phases in Agile framework in detail.	12M	4	1
	OR			
Q.4(B)	What is Scrum? What is the need of Scrum? What values are provided by Scrum?	12M	4	2
Q.5(A)	Write about Design Organization in devops in detail.	12M	5	2
	OR			
Q.5(B)	Illustrate Continuous Delivery in devops.	12M	5	2

*** END***

Hall Ticket No:

Question Paper Code: 20MCAP407

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

MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
BIOMETRIC 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)	Explain the concept of spoofing and mimicry based attacks.	12M	1	2
	OR			
Q.1(B)	Briefly explain the attack on user inference and template database.	12M	1	2
Q.2(A)	Illustrate the biometrics based cryptographic regeneration and sharing.	12M	2	3
	OR			
Q.2(B)	Explain the different performance evaluation strategies adopted for biometric based authentication protocol.	12M	2	2
Q.3(A)	Discuss about adaptations of generalized key generalization scheme.	12M	3	3
	OR			
Q.3(B)	Explain in detail about biometric data shuffling scheme	12M	3	2
Q.4(A)	Explain in detail about security and organizational aspect of biometric system.	12M	4	2
	OR			
Q.4(B)	What are the different biometric data? Explain the significance of each biometric data for designing secure biometric system.	12M	4	3
Q.5(A)	Discuss about on card and off card alignment.	12M	5	3
	OR			
Q.5(B)	Discuss some of multi modal application with example	12M	5	3

*** END***

Hall Ticket No: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]   Question Paper Code: 20MCAP408

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
MACHINE LEARNING

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 terms in Bayes theorem and also discuss how Bayes theorem related to Concept learning.	12M	1	2
	OR			
Q.1(B)	Explain the Design process of learning system.	12M	1	2
Q.2(A)	How support vector machine is helpful in classification? Explain with neat sketch?	12M	2	2
	OR			
Q.2(B)	What is Regression? Distinguish between simple and multiple linear regression.	12M	2	3
Q.3(A)	Explain hidden Markov model with suitable example.	12M	3	2
	OR			
Q.3(B)	Distinguish between Markov decisions processes with partially hidden Markov decision process.	12M	3	3
Q.4(A)	What is Clustering? Explain K-Means Clustering Algorithm.	12M	4	2
	OR			
Q.4(B)	Explain about agglomerative hierarchical clustering.	12M	4	2
Q.5(A)	What is activation function in neural network? Compare single layer and multi-layer perceptron with suitable diagram.	12M	5	2
	OR			
Q.5(B)	How a face is recognized with the help of back propagation? Elaborate with neat sketch.	12M	5	3

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
SOFTWARE QUALITY ASSURANCE AND TESTING

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 briefly about (i) Verification techniques with an example. (ii)Validation Strategies available in testing process.	12M	1	3
	OR			
Q.1(B)	Explain in detail about the statistics of defects in testing process.	12M	1	2
Q.2(A)	Explain boundary value analysis in detail.	12M	2	2
	OR			
Q.2(B)	Analyze and write in detail i. Guidelines for BVA ii. Steps in developing test cases using the decision table technique	12M	2	1
Q.3(A)	Explain the difference between coverage metrics and traceability matrix.	12M	3	2
	OR			
Q.3(B)	Discuss the differences between configuration, compatibility, and interoperability testing with its significance?	12M	3	2
Q.4(A)	What is the relationship between quality, correctness, defects, and quality attributes?	12M	4	2
	OR			
Q.4(B)	State some difficulties in applying the McCall and ISO 9126 quality models.	12M	4	3
Q.5(A)	Compare both the entry and exit levels of quality for individual QA alternatives. What is the defect level before and after applying these specific QA alternatives? explain	12M	5	1
	OR			
Q.5(B)	Describe in detail about defect management based on fault tolerance.	12M	5	2

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
CYBER 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)	Explain briefly the cyber–Security Management System.	12 M	1	3
	OR			
Q.1(B)	Write Short Notes on Perimeter Defense and Encryption.	12 M	1	2
Q.2(A)	What are firewalls? Explain All its types	12M	2	1
	OR			
Q.2(B)	What is Trojan horse? Explain all its types.	12M	2	1
Q.3(A)	Explain the steps involved for creating assurance for cyber security framework?	12M	3	3
	OR			
Q.3(B)	How to Create a Secure Cyber Ecosystem?	12M	3	3
Q.4(A)	What are the steps needed to Promote R&D in Cyber security? Discuss.	12M	4	1
	OR			
Q.4(B)	What are digital forensics? Explain all the applications.	12M	4	1
Q.5(A)	Write short notes on Patents and Copy rights.	12M	5	2
	OR			
Q.5(B)	Discuss the trends of cyber law.	12M	5	2

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
DEEP LEARNING

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 Neural Network? Explain the structure of Neural Network.	12M	1	1
	OR			
Q.1(B)	Explain the working principle of back propagation algorithm.	12M	1	2
Q.2(A)	Explain the different type of activation functions used in learning algorithms.	12M	2	2
	OR			
Q.2(B)	What is Machine Learning and Deep Learning? Explain the applications of each technique.	12M	2	2
Q.3(A)	What are the different regularization method used in CNN?	12M	3	2
	OR			
Q.3(B)	Explain the architecture of AlexNet.	12M	3	2
Q.4(A)	Explain the working principle of Bidirectional RNNs.	12M	4	2
	OR			
Q.4(B)	Discuss about Back propagation through time (BPTT) technique used for training certain types of Recurrent neural network.	12M	4	3
Q.5(A)	Briefly explain about Auto Encoders and Decoders	12M	5	2
	OR			
Q.5(B)	What is Deep Belief Networks? Explain it in detail.	12M	5	2

*** END***

MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE, MADANAPALLE
(UGC-AUTONOMOUS)
MCA II Year I Semester (R20) Regular End Semester Examinations – April 2022
SOFTWARE PROJECT MANAGEMENT

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)	a) What is Management and discuss some ways of categorizing software projects.	(6M+6 M)	1	1
	b) Explain Activities Covered by Software Project Management.		1	3
	OR			
Q.1(B)	a) Discuss overview of project planning.	(12M)	1	2
	b) What is Management and discuss about Management Control in project.		1	2
Q.2(A)	Explain Cost Benefit Evaluation Techniques and Risk Evaluation in detail.	(12M)	2	3
	OR			
Q.2(B)	a) What is software estimation and risk evaluation?	(6M+6 M)	2	1
	b) Explain Problems with over and under estimates		2	2
Q.3(A)	Explain the process of risk planning and risk monitoring	12M	3	3
	OR			
Q.3(B)	a) Discuss about risk planning and risk monitoring	(6M+6 M)	2	2
	b) Explain Forward Pass – Backward Pass network model		2	3
Q.4(A)	a) Explain the process of Getting Project Back to Target.	(6M+6 M)	4	3
	b) Discuss Cost Monitoring & Prioritizing Monitoring.		4	2
	OR			
Q.4(B)	Describe in detail about Visualizing Progress of a project.	12M	4	2
Q.5(A)	Explain Instruction in the Best Methods and Motivation.	12M	5	3
	OR			
Q.5(B)	Discuss best Methods for Selecting the Right Person for the Job,	12M	5	2

*** END***