R20

Code No: R20A0518

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Regular/Supplementary Examinations, June 2024

Machine Learning

(CSE, CSE-CS, CSE-DS & CSE-IOT)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

			BCLL	CO(s)	Marks
		SECTION-I			
1	***A***	Discuss the importance of feature selection in machine learning and elaborate on the differences between Filter, Wrapper, and Embedded methods	**L3**	**CO-I**	**[7M]**
	B	Explain the concept of Dimensionality Reduction in machine learning.	**L3**	**CO-I**	**[7M]**
		OR			
2	***A***	Explain the process of feature normalization, focusing on min-max normalization Discuss their advantages and limitations.	**L3**	**CO-I**	**[9M]**
	B	What is Machine Learning, and explain different types of machine learning?	**L2**	**CO-I**	**[5M]**
		SECTION-II			
3	***A***	Compare and contrast Simple Linear Regression and Multiple Linear Regression, highlighting their differences in terms of the number of predictors and model complexity.	**L3**	**CO-II**	**[7M]**
	B	Explain the concept of Support Vector Machines (SVM).	**L3**	**CO-II**	**[7M]**
		OR			
4	***A***	Describe the idea of ID3 algorithm in decision trees.	**L3**	**CO-II**	**[10M]**
	B	Examine the features of Mean Absolute Error (MAE) used for?	**L3**	**CO-II**	**[4M]**
		SECTION-III			
5	***A***	Mention the purpose of Activation Functions in the context of neural networks.	**L3**	**CO-III**	**[7M]**
	B	Discuss the importance of the Confusion Matrix in assessing the performance of classification models	**L3**	**CO-III**	**[7M]**
		OR			
6	***A***	Explain the concept of Recall in classification evaluation.	**L3**	**CO-III**	**[7M]**
	B	Discuss how ANNs are trained using the Back Propagation Algorithm to minimize prediction errors	**L3**	**CO-III**	**[7M]**
		SECTION-IV			
7	***A***	Discuss the importance of model validation in classification tasks, including the risks of overfitting and underfitting.	**L3**	**CO-IV**	**[7M]**
	B	Explain the concept of Ensemble Methods in classification.	**L3**	**CO-IV**	**[7M]**
		OR			

8	***A***	Examine the process of Overfitting in the context of classification models.	**L3**	**CO-IV**	**[7M]**
	B	Compare and contrast different model validation techniques, including the Holdout Method, K-Fold Cross Validation, and Leave-One-Out Cross Validation.	**L3**	**CO-IV**	**[7M]**

SECTION-V

9		Evaluate the role of clustering algorithms such as K-Means, K-Modes, and K-Prototypes in Unsupervised Learning. Compare and contrast their objectives, assumptions, and applications, providing examples for each	**L5**	**CO-V**	**[14M]**
		OR			
10		Elucidate the working principle of the Gaussian Mixture Models (GMMs) in clustering data. Discuss how GMMs model data distributions using a combination of Gaussian distributions and how they handle complex data patterns.	**L5**	**CO-V**	**[14M]**

***

Code No: R20A0517

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Regular/Supplementary Examinations, June 2024

Distributed Systems

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

			BCLL	CO(s)	Marks
		SECTION-I			
1	***A***	What is Distributed Systems? Explain the characteristics of Distributed Systems	**L2**	**CO-I**	**[7M]**
	B	What are the design requirements for distributed architectures?	**L3**	**CO-I**	**[7M]**
		OR			
2	***A***	Discuss about the resource sharing in Distributed Systems.	**L2**	**CO-I**	**[7M]**
	B	Give the challenges in resource sharing using web.	**L2**	**CO-I**	**[7M]**
		SECTION-II			
3	***A***	Distinguish between logical clocks and vector clocks?	**L4**	**CO-II**	**[7M]**
	B	What is election algorithm? Illustrate ring-based election algorithm	**L3**	**CO-II**	**[7M]**
		OR			
4	***A***	Describe the algorithm for external synchronization	**L3**	**CO-II**	**[7M]**
	B	Discuss about consensus problem?	**L2**	**CO-II**	**[7M]**
		SECTION-III			
5	***A***	What is a middleware? Explain the various layers present in it.	**L2**	**CO-III**	**[7M]**
	B	With a neat sketch explain communication between distributed objects	**L2**	**CO-III**	**[7M]**
		OR			
6	***A***	Explain the issues with the UDP datagram Communication	**L3**	**CO-III**	**[7M]**
	B	What is Remote Method Invocation? Explain the implementation of Remote Method Invocation with a neat sketch.	**L4**	**CO-III**	**[7M]**
		SECTION-IV			
7	***A***	Explain File Service Architecture in distributed system with a neat sketch?	**L2**	**CO-IV**	**[7M]**
	B	Explain in detail about two models of memory consistency.	**L2**	**CO-IV**	**[7M]**
		OR			
8	***A***	Differentiate between message passing and distributed shared memory	**L4**	**CO-IV**	**[7M]**
	B	What are the various operations provided by NFS Server	**L2**	**CO-IV**	**[7M]**
		SECTION-V			
9	***A***	Explain Optimistic concurrency control in Transactions and Concurrency control?	**L2**	**CO-V**	**[8M]**
	B	What is a Phantom Deadlock?	**L1**	**CO-V**	**6M]**
		OR			
10	***A***	Write about Fault model for distributed transactions?	**L2**	**CO-V**	**[6M]**
	B	How is recovery of two-phase commit protocol done in a distributed transaction?	**L4**	**CO-V**	**[8M]**

***

Code No: R20A6202 **R20**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Regular/Supplementary Examinations, June 2024

Cyber Security

(CSE, CSE-AIML, CSE-DS, CSE-IOT, B.Tech-AIDS & B.Tech-AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

			BCLL	CO(s)	Marks
		SECTION-I			
1	***A***	Explain in detail about motive of attackers.	**L2**	**CO-I**	**[7M]**
	B	Illustrate about CIA Triad	**L2**	**CO-I**	**[7M]**
		OR			
2	***A***	Explain briefly Cyber Threats-Cyber Warfare.	**L2**	**CO-I**	**[7M]**
	B	Discuss about the reasons for IP spoofing and how to protect from IP Spoofing	**L2**	**CO-I**	**[7M]**
		SECTION-II			
3	***A***	Write about Roles of International Law.	**L2**	**CO-II**	**[7M]**
	B	Describe the overview Cyber Security Regulations.	**L2**	**CO-II**	**[7M]**
		OR			
4	***A***	Explain about National Cyber Security Policy	**L2**	**CO-II**	**[7M]**
	B	Explain about the INDIAN Cyberspace	**L2**	**CO-II**	**[7M]**
		SECTION-III			
5		Explain Credit card Frauds in Mobile and Wireless Computing Era	**L2**	**CO-III**	**[14M]**
		OR			
6	***A***	Illustrate about the attacks on Mobile-Cell Phones.	**L2**	**CO-III**	**[7M]**
	B	Explain about the Proliferation of mobile and wireless devices.	**L2**	**CO-III**	**[7M]**
		SECTION-IV			
7	***A***	Explain in detail about web threats for organizations	**L2**	**CO-IV**	**[7M]**
	B	Describing the ethical dimension of cybercrimes	**L2**	**CO-IV**	**[7M]**
		OR			
8	***A***	Explain about the cost of cybercrimes and IPR issues.	**L2**	**CO-IV**	**[7M]**
	B	Discuss about security risks and perils for organizations	**L2**	**CO-IV**	**[7M]**
		SECTION-V			
9	***A***	Describe the privacy in medical domain.	**L2**	**CO-V**	**[7M]**
	B	Discuss the various types of attacks related to data privacy.	**L2**	**CO-V**	**[7M]**
		OR			
10	***A***	Explain about Data linking and profiling.	**L2**	**CO-V**	**[7M]**
	B	Explain in detail the forensic analysis of E-mail	**L2**	**CO-V**	**[7M]**

***

Code No: R20A0453

R20

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Regular/Supplementary Examinations, June 2024

Robotics & Automation

(CSE, IT, CSE-CS, CSE-AI&ML, CSE-DS & CSE-IOT, B.Tech-AIDS & B.Tech-AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

			BCLL	CO(s)	Marks
		SECTION-I			
1	A	Explain about Hardware Architecture of Embedded System	**L4**	**CO-I**	**[7M]**
	B	Write about the Categories of Embedded Systems	**L1**	**CO-I**	**[7M]**
		OR			
2	A	Explain the architecture of Embedded Controller	**L4**	**CO-I**	**[7M]**
	B	Discuss about the need for Robots	**L2**	**CO-I**	**[7M]**
		SECTION-II			
3	A	Explain different types of Joints	**L1**	**CO-II**	**[7M]**
	B	Write about the classification of the Robots	**L1**	**CO-II**	**[7M]**
		OR			
4	A	What are the basic methods of robot Programming	**L2**	**CO-II**	**[7M]**
	B	Sketch and explain the operation of Stepper motor	**L1**	**CO-II**	**[7M]**
		SECTION-III			
5	A	Explain about AVR family architecture	**L4**	**CO-III**	**[7M]**
	B	Write about AVR I/O Ports in detail.	**L2**	**CO-III**	**[7M]**
		OR			
6	A	Write about RISC AVR Microcontroller architecture	**L4**	**CO-III**	**[7M]**
	B	Explain about the PIN diagram of AVR	**L1**	**CO-III**	**[7M]**
		SECTION-IV			
7	A	Write about the Fundamentals of ARM Processor	**L2**	**CO-IV**	**[7M]**
	B	Explain about the Pipeline Concept and register set of ARM processor.	**L4**	**CO-IV**	**[7M]**
		OR			
8	A	Write short notes on a) Interrupts and b) vector Table	**L2**	**CO-IV**	**[7M]**
	B	Explain ARM core data flow model with neat diagram.	**L4**	**CO-IV**	**[7M]**
		SECTION-V			
9	A	Write about the Localisation in detail along with its importance	**L2**	**CO-V**	**[7M]**
	B	Explain about the perception of Robots	**L4**	**CO-V**	**[7M]**
		OR			
10	A	Write about Mapping Configuring Space in detail	**L2**	**CO-V**	**[7M]**
	B	Explain about the Ethics and Risks associated with Artificial Intelligence	**L4**	**CO-V**	**[7M]**

***

R20

Code No: R20A0516

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Regular/Supplementary Examinations, June 2024

Full Stack Development

(CSE, CSE-AIML & B.Tech-AIML)

Roll No										

Time: 3 hours **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

***

			BCLL	CO(s)	Marks
		SECTION-I			
1	A	Define HTML and explain its role in web development.	**L1**	**CO-I**	**[7M]**
	B	Define Git and GitHub. Explain the difference between them.	**L1,L5**	**CO-I**	**[7M]**
		OR			
2	A	Explain the process of hosting a website on a web server. Describe the steps involved in configuring a domain name, setting up DNS records, and uploading website files to a web server.	**L5,L6**	**CO-I**	**[7M]**
	B	Explain the difference between inline, internal, and external CSS stylesheets. Discuss the advantages and disadvantages of each approach, and provide examples of when each approach might be appropriate.	**L5,L6**	**CO-I**	**[7M]**
		SECTION-II			
3	A	Explain the basic concepts of OOP in JavaScript and provide examples of how to create objects, classes, and inheritance in JavaScript.	**L5**	**CO-II**	**[7M]**
	B	Discuss the structure of JSON data with an example.	**L6**	**CO-II**	**[7M]**
		OR			
4	A	Discuss various UI components provided by jQuery UI library, Provide examples of how to use these components to enhance the user interface of a web application.	**L2**	**CO-II**	**[7M]**
	B	Discuss the concept of AJAX callbacks and how they are used to handle asynchronous responses from the server. Provide examples of handling AJAX responses using callback functions.	**L6**	**CO-II**	**[7M]**
		SECTION-III			
5	A	Describe the role of React Router in building Single Page Applications (SPAs). How does React Router handle routing in a React application?	**L2**	**CO-III**	**[7M]**
	B	Compare and contrast Redux actions and reducers. How do actions and reducers work together to manage state changes in a Redux application?	**L2**	**CO-III**	**[7M]**
		OR			
6	A	Explain the concept of Flow architecture and its role in	**L5**	**CO-III**	**[7M]**

		managing data flow in React.js applications.			
	B	Explain the concept of client-server communication in React.js applications. Describe common methods used for making HTTP requests and handling responses in React.	**L5**	**CO-III**	**[7M]**
		SECTION-IV			
7	A	Describe the MVC architecture pattern used in web development. Explain the responsibilities of each component and how they interact with each other. Provide a diagram to illustrate the MVC architecture.	**L6**	**CO-IV**	**[7M]**
	B	Demonstrate the implementation of a simple Java web application using the MVC architecture pattern and Spring Framework. Provide a step-by-step explanation of how each component is implemented and integrated within the application.	**L2**	**CO-IV**	**[7M]**
		OR			
8	A	Explain the basic concepts of Java programming. Provide examples to illustrate each concept.	**L5**	**CO-IV**	**[7M]**
	B	Describe the key features of the Spring Framework and how it facilitates building web applications in Java. Discuss the advantages of using Spring for web development.	**L6**	**CO-IV**	**[7M]**
		SECTION-V			
9	A	Explain the concept of relational schemas and normalization. How does normalization help in designing efficient databases? Provide examples to illustrate your answer.	**L3**	**CO-V**	**[7M]**
	B	Compare and contrast the primary key and foreign key constraints in SQL databases. Discuss their roles in maintaining data integrity and enforcing relationships between tables. Provide examples to illustrate their usage.	**L3**	**CO-V**	**[7M]**
		OR			
10	A	Explain the Agile development principles and their significance in software development projects.	**L3**	**CO-V**	**[7M]**
	B	Describe the concept of deploying applications in the cloud. Provide examples of popular cloud platforms and deployment strategies.	**L3**	**CO-V**	**[7M]**

***