R15

Code No: R15A0519

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Supplementary Examinations, June 2024

Information Security

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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		PART-A (25 Marks) **(Write all answers of this part at one place)**	**BC LL**	**CO(s)**	**Marks**
1	A	What is an active attack? Give example.	**L2**	**CO-I**	**[2M]**
	B	Explain Non repudiation service in brief.	**L2**	**CO-I**	**[3M]**
	C	List out the differences between Public Key and Private Key algorithms.	**L2**	**CO-II**	**[2M]**
	D	Explain the design considerations of stream cipher.	**L4**	**CO-II**	**[3M]**
	E	What is Message Authentication Code?	**L1**	**CO-III**	**[2M]**
	F	Write any three advantages of hashing functions.	**L2**	**CO-III**	**[3M]**
	G	List out the features of Authentication Header.	**L1**	**CO-IV**	**[2M]**
	H	Discuss about the concept of combining security associations.	**L3**	**CO-IV**	**[3M]**
	I	Write short note about Secure Socket Layer?	**L2**	**CO-V**	**[2M]**
	J	Discuss cross site scripting vulnerability.	**L3**	**CO-V**	**[3M]**
		PART-B (50 Marks)			
		SECTION-I			
2	A	Discuss in detail about various types of Security attacks with the help of neat diagrams.	**L2**	**CO-I**	**[5M]**
	B	What is symmetric key cryptography? Discuss its advantages and limitations.	**L2**	**CO-I**	**[5M]**
		OR			
3	A	Explain the model for Network Security with the help of a neat diagram.	**L2**	**CO-I**	**[5M]**
	B	Explain various substitution techniques with suitable examples.	**L3**	**CO-I**	**[5M]**
		SECTION-II			
4	A	Briefly explain the characteristics and operations of RC4 Encryption algorithm.	**L2**	**CO-II**	**[5M]**
	B	Consider Diffie-Hellman scheme with a common prime q=11, and a primitive root α=2. a) If user "A" has public key Y_A=9, what is A's private key X_A. b) If user "B" has public key Y_B=3, what is shared secret key K.	**L5**	**CO-II**	**[5M]**

		OR			
5	A	Explain Block Cipher design principles in detail.	**L2**	**CO-II**	**[5M]**
	B	Explain RSA algorithm with the help of suitable example.	**L3**	**CO-II**	**[5M]**
		SECTION-III			
6	A	Explain the approaches for Digital Signatures based on Public Key Encryption.	**L2**	**CO-III**	**[5M]**
	B	Discuss about Biometric Authentication in detail.	**L2**	**CO-III**	**[5M]**
		OR			
7	A	Explain about the requirements of Authentication in detail.	**L2**	**CO-III**	**[5M]**
	B	Client machine C wants to communicate with server S. Explain how it can be achieved through Kerberos protocol?	**L3**	**CO-III**	**[5M]**
		SECTION-IV			
8	A	Explain in detail about the mechanism of security associations in IP Security.	**L2**	**CO-IV**	**[5M]**
	B	Define payload? Explain about encapsulating security payload in detail.	**L2**	**CO-IV**	**[5M]**
		OR			
9	A	Explain the general format of a PGP message with a pictorial representation.	**L2**	**CO-IV**	**[5M]**
	B	What is S/MIME? How Does S/MIME Address Email Security Problems?	**L4**	**CO-IV**	**[5M]**
		SECTION-V			
10	A	Discuss the need of Secure Socket Layer in detail.	**L4**	**CO-V**	**[5M]**
	B	What is Intrusion? Discuss Intrusion detection system with neat diagram.	**L2**	**CO-V**	**[5M]**
		OR			
11	A	Write a short note on firewall design principles and types of firewalls.	**L2**	**CO-V**	**[5M]**
	B	Discuss in detail about secure electronic transaction.	**L4**	**CO-V**	**[5M]**

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R15

Code No: R15A0520

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Supplementary Examinations, June 2024

Web Technologies

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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			BCLL	CO(s)	Marks
		PART-A (10 Marks)			
		(Write all answers of this part at one place)			
1	A	Define URL and explain its significance in web browsing.	**L2**	**CO-I**	**[2M]**
	B	Differentiate between client-side and server-side scripting languages.	**L2**	**CO-I**	**[3M]**
	C	What are the main components of server-side programming with PHP?	**L1**	**CO-II**	**[2M]**
	D	Describe the role of sessions in maintaining stateful communication.	**L2**	**CO-II**	**[3M]**
	E	Define servlet and its lifecycle.	**L1**	**CO-III**	**[2M]**
	F	Explain the role of cookies in session management.	**L2**	**CO-III**	**[3M]**
	G	What are the advantages of using JSP over servlets?	**L1**	**CO-IV**	**[2M]**
	H	Describe the role of JSP expressions and code snippets.	**L2**	**CO-IV**	**[3M]**
	I	Explain the purpose of JDBC in Java programming.	**L2**	**CO-V**	**[2M]**
	J	Compare and contrast accessing a database from a servlet versus a JSP page.	**L2**	**CO-V**	**[3M]**
		PART-B (50 Marks)			
		SECTION-I			
2	A	Explain the process of how a web browser interprets a URL and retrieves the corresponding web page using HTTP.	**L3**	**CO-I**	**[5M]**
	B	Compare and contrast the advantages and disadvantages of using frames and modern CSS layout techniques for web page structuring.	**L4**	**CO-I**	**[5M]**
		OR			
3	A	Develop a basic HTML form that includes various input fields like text, radio buttons, and checkboxes, along with JavaScript code for client-side validation.	**L3**	**CO-I**	**[5M]**
	B	Analyze the impact of using inline CSS, internal CSS, and external CSS files on the performance and maintenance of a web page.	**L4**	**CO-I**	**[5M]**
		SECTION-II			
4	A	Develop a PHP script that processes form data submitted via HTTP POST method, validating and sanitizing input before storing it in a database.	**L3**	**CO-II**	**[5M]**
	B	Create a PHP script that interacts with an XML document using DOM manipulation techniques, such as parsing, querying, and modifying	**L3**	**CO-II**	**[5M]**

		XML elements.			
		OR			
5	A	Implement PHP functions to handle user sessions and cookies, demonstrating their usage for user authentication and personalized content delivery.	**L3**	**CO-II**	**[5M]**
	B	Evaluate the role of XML schemas in defining the structure and validation rules for XML documents.	**L4**	**CO-II**	**[5M]**
		SECTION-III			
6	A	Develop a servlet that handles HTTP requests, extracting parameters from the request URL and generating appropriate responses based on the requested resources.	**L3**	**CO-III**	**[5M]**
	B	Evaluate the role of servlet filters in web application development.	**L4**	**CO-III**	**[5M]**
		OR			
7	A	Compare the advantages and disadvantages of using servlets versus traditional CGI scripts for dynamic web content generation.	**L4**	**CO-III**	**[5M]**
	B	Deploy a servlet-based web application to a servlet container (e.g., Tomcat), specifying the necessary configuration files and deployment descriptors.	**L3**	**CO-III**	**[5M]**
		SECTION-IV			
8	A	Develop a JSP page that integrates servlet functionality, demonstrating the seamless interaction between JSP and Java code for dynamic content generation.	**L3**	**CO-IV**	**[5M]**
	B	Analyze the benefits of using JSP tag libraries (e.g., JSTL) over scriptlet-based coding in JSP pages.	**L4**	**CO-IV**	**[5M]**
		OR			
9	A	Compare the lifecycle of a JSP page with that of a servlet.	**L4**	**CO-IV**	**[5M]**
	B	Create a JSP application that utilizes expression language (EL) to access and display data from JavaBeans components, demonstrating the separation of presentation logic from business logic.	**L3**	**CO-IV**	**[5M]**
		SECTION-V			
10	A	Analyze the differences between different types of JDBC drivers (Type 1, Type 2, Type 3, Type 4).	**L4**	**CO-V**	**[5M]**
	B	Compare the process of executing simple queries in a standalone Java application using JDBC with executing the same queries within a servlet.	**L4**	**CO-V**	**[5M]**
		OR			
11	A	Evaluate the advantages and disadvantages of using the javax.sql.* package compared to direct SQL statements for database access in Java applications.	**L3**	**CO-V**	**[5M]**
	B	Discuss how JavaBeans facilitate modularization and encapsulation of business logic.	**L2**	**CO-V**	**[5M]**

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R15

Code No: R15A0521

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Supplementary Examinations, June 2024

Software Testing Methodologies

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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			BCLL	CO(s)	Marks
		PART-A (25 Marks)			
		(Write all answers of this part at one place)			
1	A	What are remedies for test bugs? Explain	**L1**	**CO-I**	**[2M]**
	B	Define testing and debugging?	**L2**	**CO-I**	**[3M]**
	C	What is Data-flow testing?	**L2**	**CO-II**	**[2M]**
	D	What are the elements of flow graph?	**L2**	**CO-II**	**[3M]**
	E	Give an example of a transaction-flow	**L1**	**CO-III**	**[2M]**
	F	Explain about data flow anomaly graph with example.	**L3**	**CO-III**	**[3M]**
	G	How can we check the consistency and completeness in the decision tables?	**L4**	**CO-IV**	**[2M]**
	H	Give examples of four variable KV-Chart?	**L2**	**CO-IV**	**[3M]**
	I	What is impossible state?	**L1**	**CO-V**	**[2M]**
	J	Explain state-transition table with example	**L1**	**CO-V**	**[3M]**
		PART-B (50 Marks)			
		SECTION-I			
2	A	Discuss about various testing dichotomies with example	**L4**	**CO-I**	**[5M]**
	B	Describe models of testing?	**L2**	**CO-I**	**[5M]**
		OR			
3	A	Explain types of bugs?	**L2**	**CO-I**	**[5M]**
	B	What are the consequences of bugs? To what extent can testing be used to validate that the program is fit for its purpose?	**L2**	**CO-I**	**[5M]**
		SECTION-II			
4	A	Explain path sensitizing?	**L2**	**CO-II**	**[5M]**
	B	Give detail explanation of concepts of path testing?	**L2**	**CO-II**	**[5M]**
		OR			
5	A	What are path predicates and achievable paths?	**L2**	**CO-II**	**[5M]**
	B	Discuss applications of path testing?	**L2**	**CO-II**	**[5M]**
		SECTION-III			
6	A	Define transaction flow testing. Explain transaction flow structure.	**L1**	**CO-III**	**[5M]**

	B	Explain about the data-flow model with example.	**L3**	**CO-III**	**[5M]**
		OR			
7	A	What is the strategy of domain testing? Explain in brief.	**L1**	**CO-III**	**[5M]**
	B	Define Domain testing? Write about restrictions of domain testing.	**L1**	**CO-III**	**[5M]**
		SECTION-IV			
8	A	Write the procedure for specification validation.	**L1**	**CO-IV**	**[5M]**
	B	Explain loop term step in a reduction procedure with example.	**L3**	**CO-IV**	**[5M]**
		OR			
9	A	Describe the procedure for specification Validation using KV Charts	**L4**	**CO-IV**	**[5M]**
	B	Explain in detail flow anomaly detection?	**L2**	**CO-IV**	**[5M]**
		SECTION-V			
10	A	Write about Properties of relations?	**L2**	**CO-V**	**[5M]**
	B	Write about the usage of Winrunner tools?	**L1**	**CO-V**	**[5M]**
		OR			
11	A	Explain node reduction algorithm?	**L1**	**CO-V**	**[5M]**
	B	What are the principles of state testing? Explain its advantages and disadvantages?	**L2**	**CO-V**	**[5M]**

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R15

Code No: R15A0524

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Supplementary Examinations, June 2024

Distributed Systems

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

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			BCLL	CO(s)	Marks
		PART-A (25 Marks)			
		(Write all answers of this part at one place)			
1	A	Define Distributed systems with an example?	**L1**	**CO-I**	**[2M]**
	B	Explain about Peer-to-peer architecture?	**L2**	**CO-I**	**[3M]**
	C	What is logical time?	**L1**	**CO-II**	**[2M]**
	D	Write about election algorithm?	**L1**	**CO-II**	**[3M]**
	E	What is a Socket?	**L1**	**CO-III**	**[2M]**
	F	Define Remote Procedure Call?	**L1**	**CO-III**	**[3M]**
	G	What is flat file service interface?	**L1**	**CO-IV**	**[2M]**
	H	What is release consistency?	**L1**	**CO-IV**	**[3M]**
	I	Define Transaction recovery in Distributed Transactions?	**L1**	**CO-V**	**[2M]**
	J	How can a deadlock be prevented?	**L1**	**CO-V**	**[3M]**
		PART-B (50 Marks)			
		SECTION-I			
2	A	Explain various challenges that are occurred in the process of designing distributed systems?	**L2**	**CO-I**	**[7M]**
	B	List the problems of distributed systems?	**L1**	**CO-I**	**[3M]**
		OR			
3	A	Compare fundamental and architectural models?	**L2**	**CO-I**	**[5M]**
	B	Explain Internet and its working?	**L2**	**CO-I**	**[5M]**
		SECTION-II			
4	A	Describe about events and process states?	**L1**	**CO-II**	**[5M]**
	B	Explain the snapshot algorithm of Chandy and Lamport?	**L5**	**CO-II**	**[5M]**
		OR			
5	A	Discuss about distributed mutual exclusion?	**L1**	**CO-II**	**[5M]**
	B	Write about Maekawa's voting algorithm?	**L1**	**CO-II**	**[5M]**
		SECTION-III			
6	A	Explain about the API for the Internet protocols?	**L2**	**CO-III**	**[5M]**
	B	State the multicast communication principles and techniques in detail?	**L1**	**CO-III**	**[5M]**

		OR			
7	A	Discuss about communication between distributed objects?	**L1**	**CO-III**	**[5M]**
	B	Write about events and notifications?	**L1**	**CO-III**	**[5M]**
		SECTION-IV			
8	A	Explain the file service architecture with a neat diagram?	**L2**	**CO-IV**	**[5M]**
	B	Discuss about name services and domain name services?		**CO-IV**	**[5M]**
		OR			
9	A	State the applications of directory services?	**L1**	**CO-IV**	**[5M]**
	B	Explain about design and implementation issues of distributed shared memory?	**L2**	**CO-IV**	**[5M]**
		SECTION-V			
10	A	Explain Optimistic concurrency control in Transactions and Concurrency control?	**L5**	**CO-V**	**[5M]**
	B	Discuss about locks in distributed systems?	**L2**	**CO-V**	**[5M]**
		OR			
11	A	What is mean by atomic commit protocols? Explain?	**L1**	**CO-V**	**[5M]**
	B	Explain about distributed deadlock briefly with an example?	**L2**	**CO-V**	**[5M]**

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R15

Code No: R15A0424

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Supplementary Examinations, June 2024

Embedded Systems Design

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

		PART-A (25 Marks) **(Write all answers of this part at one place)**	**BCLL**	**CO(s)**	**Marks**
1	A	Define Embedded System.	**L1**	**CO-I**	**[2M]**
	B	What are the operational attributes of embedded system?	**L1**	**CO-I**	**[3M]**
	C	What are the general purpose processors?	**L1**	**CO-II**	**[2M]**
	D	Write about ROM.	**L1**	**CO-II**	**[3M]**
	E	What are the embedded firmware design approaches?	**L1**	**CO-III**	**[2M]**
	F	What is embedded firmware	**L2**	**CO-III**	**[3M]**
	G	Define RTOS.	**L1**	**CO-IV**	**[2M]**
	H	Define thread.	**L1**	**CO-IV**	**[3M]**
	I	Define Bluetooth and wifi technologies	**L1**	**CO-V**	**[2M]**
	J	Write a note on onboard communication interfaces.	**L2**	**CO-V**	**[3M]**
		PART-B (50 Marks)			
		SECTION-I			
2	A	Describe history of embedded system.	**L3**	**CO-I**	**[5M]**
	B	Discuss purpose of embedded system.	**L3**	**CO-I**	**[5M]**
		OR			
3	A	What are the applications of embedded system.	**L1**	**CO-I**	**[5M]**
	B	What are the characteristics of embedded system.	**L1**	**CO-I**	**[5M]**
		SECTION-II			
4	A	Discuss about memory selection for embedded systems	**L3**	**CO-II**	**[5M]**
	B	Explain about ROM.	**L2**	**CO-II**	**[5M]**
		OR			
5	A	Write about ASICs.	**L5**	**CO-II**	**[5M]**
	B	Write about sensors and actuators	**L5**	**CO-II**	**[5M]**
		SECTION-III			
6		Explain super loop based approach	**L2**	**CO-IV**	**[10M]**
		OR			
7		Discuss operating system based approach	**L3**	**CO-IV**	**[10M]**
		SECTION-IV			
8	A	Explain different types of operating systems.	**L2**	**CO-IV**	**[5M]**
	B	Differentiate between multi-processing and multitasking.	**L4**	**CO-IV**	**[5M]**

		OR			
9	A	Discuss about non preemptive scheduling.	**L3**	**CO-IV**	**[5M]**
	B	How to choose an RTOS.	**L4**	**CO-IV**	**[5M]**
		SECTION-V			
10		Explain in detail about I2C and SPI interfaces	**L4**	**CO-V**	**[10M]**
		OR			
11	A	Explain about USB Interface	**L4**	**CO-V**	**[5M]**
	B	Write short notes on RS232 interface.	**L4**	**CO-V**	**[5M]**

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R15

Code No: R15A0518

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous Institution – UGC, Govt. of India)

III B.Tech II Semester Supplementary Examinations, June 2024

Object Oriented Analysis and Design

(CSE)

Roll No										

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B
Part A is compulsory which carriers 25 marks and Answer all questions.
Part B Consists of 5 SECTIONS (One SECTION for each UNIT). Answer FIVE Questions, Choosing ONE Question from each SECTION and each Question carries 10 marks.

			BCLL	CO(s)	Marks
		PART-A (10 Marks)			
		(Write all answers of this part at one place)			
1	A	What is Analysis and Design?	**L2**	**CO-I**	**[2M]**
	B	What are the three perspectives to apply UML?	**L2**	**CO-I**	**[3M]**
	C	Compare Include and Extend use case relationships.	**L1**	**CO-II**	**[2M]**
	D	What is an Object, state of the object?	**L2**	**CO-II**	**[3M]**
	E	List the common notations used in interaction diagram	**L1**	**CO-III**	**[2M]**
	F	Differentiate Class diagram and Interaction diagram.	**L1**	**CO-III**	**[3M]**
	G	Interpret the meaning of event, state and Transition	**L2**	**CO-IV**	**[2M]**
	H	Define State Chart Diagram? When to use State Diagram?	**L2**	**CO-IV**	**[3M]**
	I	Give the primary goals in the design of UML	**L1**	**CO-V**	**[2M]**
	J	What is an attribute? Mention its types	**L2**	**CO-V**	**[3M]**
		PART-B (50 Marks)			
		SECTION-I			
2	A	Explain the importance of modeling.	**L3**	**CO-I**	**[5M]**
	B	List out the principles of modeling in detail and explain it.	**L3**	**CO-I**	**[5M]**
		OR			
3	A	What are rules of the unified modeling language?	**L2**	**CO-I**	**[5M]**
	B	Explain the Modeling system architecture of UML?	**L3**	**CO-I**	**[5M]**
		SECTION-II			
4	A	Explain advanced relationships with examples.	**L3**	**CO-II**	**[5M]**
	B	Identify the importance of interfaces and their roles?	**L3**	**CO-II**	**[5M]**
		OR			
5		List out the Terms and Concepts of relationships	**L2**	**CO-II**	**[10M]**
		SECTION-III			
6	A	Explain in details of Use cases, actors, include, and extend with suitable example?	**L3**	**CO-III**	**[5M]**
	B	Design an use case diagram to show ATM system	**L3**	**CO-III**	**[5M]**
		OR			
7	A	Explain Roles, links, messages, actions, and sequences	**L3**	**CO-III**	**[5M]**

		of interactions.			
	B	Build the Modeling flows of control.	**L4**	**CO-III**	**[5M]**
		SECTION-IV			
8		Discuss about UML deployment and component diagrams with suitable examples	**L3**	**CO-IV**	**[10M]**
		OR			
9	A	Explain the terms and concepts of Component diagrams?	**L3**	**CO-IV**	**[5M]**
	B	Explain the importance of Deployment diagram.	**L3**	**CO-IV**	**[5M]**
		SECTION-V			
10		Explain the unified library application in detail.	**L3**	**CO-V**	**[10M]**
		OR			
11		Represent the activity diagram for the following Scenario, Booking a ticket on Indian railways e-ticket system (IRCTC).	**L3**	**CO-V**	**[10M]**

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