Hall Ticket Number :										

R-20

Code: 20A553T

III B.Tech. I Semester Regular Examinations Dec 2022/Jan 2023

Software Engineering

(Common to CSE and AI&DS)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

1. Answer all the following short answer questions (5 X 2 = 10M)		CO	BL
a)	Illustrate the steps in SDLC model.	CO1	L2
b)	What are the characteristics of good SRS document?	CO2	L1
c)	List the principles of a software design.	CO3	L1
d)	Will exhaustive testing guarantee that the program is 100% correct? Explain.	CO4	L3
e)	Specify the purpose of Software Configuration Management.	CO5	L2

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	Specify different software myths and explain.	4M	CO1	L3
	b)	Explain perspective process models.	8M	CO1	L2
		OR			
3.		Define software process. Describe the unified process, personal and Team process models.	12M	CO1	L2
		UNIT–II			
4.		Describe the process of developing SRS (Software Requirement Process) with use cases.	12M	CO2	L3
		OR			
5.		Explain scenario based modeling and UML models for Requirement engineering.	12M	CO2	L3
		UNIT–III			
6.	a)	Explain the concept of Coupling & Cohesion in Component level design.	8M	CO3	L2
	b)	Specify the purpose of class based components.	4M	CO3	L2

OR

7.		Describe different architecture styles and patterns with suitable use cases.	12M	CO3	L2

UNIT–IV

8.	a)	Specify the differences between Black box and white box testing.	4M	CO4	L3
	b)	Explain the process of User interface analysis and design.	8M	CO4	L3

OR

9.	a)	Define unit testing. Explain about unit testing considerations and procedures.	6M	CO4	L3
	b)	Illustrate the steps in Unit testing using suitable examples.	6M	CO4	L3

UNIT–V

10.	a)	Using a suitable example, explain how the following are estimated in the COCOMO estimate technique: Cost, Effort, Duration, and Size of a Project.	6M	CO5	L4
	b)	Categorize various risks in software engineering.	6M	CO5	L3

OR

11.	a)	Illustrate the Characteristics of Software Maintenance.	4M	CO5	L2
	b)	Explain the process of Software Reverse Engineering and specify its purpose.	8M	CO5	L3

*** End ***

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R-20

Code: 20A551T

III B.Tech. I Semester Regular Examinations Dec 2022/Jan 2023

Artificial Intelligence

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

			CO	BL
1.	Answer *all* the following short answer questions	(5 X 2 = 10M)		
	a) What is the concept of rational agent?		CO1	L2
	b) List out informed search methods.		CO2	L1
	c) What is knowledge based agent?		CO3	L2
	d) How partial order planning is different from hierarchical planning?		CO4	L1
	e) Define uncertainty.		CO5	L1

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	What are the four basic types of agent program in any intelligent system? Explain how did you convert them into learning agents?	8M	CO1	L1
	b)	Explain briefly the properties of Task Environments.	4M	CO1	L4
		OR			
3.	a)	What is PEAS? Explain different agent types with their PEAS descriptions.	6M	CO1	L1
	b)	Explain the state space representation of Water–Jug problem.	6M	CO1	L4
		UNIT–II			
4.	a)	Define constraint satisfaction problem (CSP). How CSP is formulated as a search problem? Explain with an example.	8M	CO2	L1
	b)	Compare and contrast DES versus BFS?	4M	CO2	L2
		OR			
5.	a)	Discuss any two search strategies that come under the heading of uninformed search?	6M	CO2	L6
	b)	Explain Uninformed Search and Informed Search Strategies.	6M	CO2	L4

UNIT–III

6.	a)	Explain with an example (i) forward chaining (ii) Backward chaining	6M	CO3	L4
	b)	Differentiate propositional logic with FOL. List the inference rules along with suitable examples for first order logic	6M	CO3	L2

OR

7.	a)	Explain the syntactic elements of first-Order logic	6M	CO3	L1
	b)	Illustrate the use of first-order logic to represent knowledge.	6M	CO3	L3

UNIT–IV

8.	a)	What are the limitations of Predicate logic as a tool for Knowledge representation? Illustrate through examples.	6M	CO4	L3
	b)	(i) Give an outline of a simple planning agent (ii) Give partial-order planning algorithm.	6M	CO4	L1

OR

9.	a)	Give a detailed account on planning with state space search	6M	CO4	L1
	b)	Explain the use of planning graph in providing better heuristic estimation with suitable example?	6M	CO4	L4

UNIT–V

10.	a)	Describe a method for constructing Bayesian networks.	6M	CO5	L2
	b)	Write and explain about conditional independence relations in belief networks?	6M	CO5	L4

OR

11.	a)	Show the use of Bayes' rule with a suitable example?	6M	CO5	L5
	b)	Write short notes on Fuzzy logic?	6M	CO5	L1

*** End ***

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R-20

Code: 20A552T

III B.Tech. I Semester Regular Examinations Dec 2022/Jan 2023

Computer Networks

(Common to CSE and AI&DS)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

		CO	BL
1.	Answer ***all*** the following short answer questions (5 X 2 = 10M)		
	a) List any two advantages and disadvantages of Guided Media.	CO1	L2
	b) What is CRC? What are the rules for selecting the CRC polynomial?	CO2	L1
	c) What is the difference between Adaptive routing and non-adaptive routing?	CO3	L1
	d) List two differences between TCP & UDP.	CO4	L2
	e) What is the structure of DNS address?	CO5	L1

PART-B

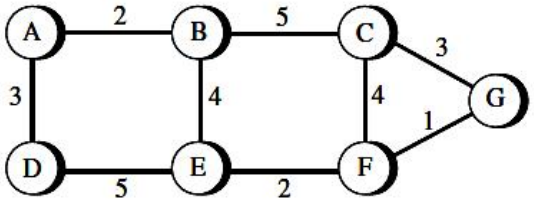
Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	How would you compare TCP / IP and OSI Model?	6M	CO1	L2
	b)	What is the principal difference between connectionless communication and connection-oriented communication?	6M	CO1	L3
		OR			
3.	a)	What is the difference between a protocol and a service interface? Explain in terms of ISO reference model?	6M	CO1	L2
	b)	Explain about unguided media with examples.	6M	CO1	L2
		UNIT–II			
4.	a)	State and explain various methods used in controlled access.	6M	CO2	L2
	b)	Write about error detection and correction .The Data word to be sent is 100100, CRC generator polynomial is x^3+x^2+1. What is the bit stream transmitted by the sender and check at receiver whether the received bit stream contains any error or not.	6M	CO2	L3
		OR			
5.	a)	What is called burst error? How can you detect it? Explain.	6M	CO2	L3
	b)	Can you assess the importance of CSMA/CD MAC protocol? Explain the types of Physical address in data link layer	6M	CO2	L2

UNIT–III

6. a) The CIDR notation of a IP address is as follows:
167.199.170.82/27
i) What type of address is the above (Host/network/broadcast)?
ii) What is the network address?
iii) What are the total numbers of hosts that can be connected in that network?
iv) What is the subnet mask?
v) What is the broadcast address of that network? 6M CO3 L3

b) Apply the Distance Vector Routing Algorithm on for the graph below and calculate distance vectors of every node during the iterations

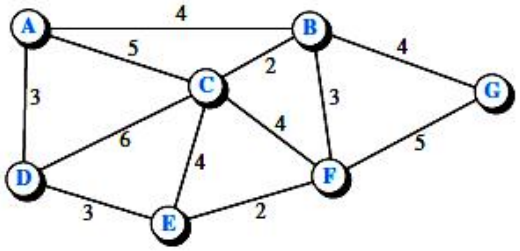


6M CO3 L3

OR

7. a) Illustrate how Packet Switching is used as a connectionless service with an example showing the forwarding/routing tables at each and every router. 6M CO3 L3

b) Apply Dijkstra's algorithm to find the shortest path tree from A to F in the Figure



6M CO3 L3

UNIT–IV

8. a) Demonstrate how connection management is done in TCP 6M CO4 L2

b) The following is the content of UDP Header In Hexadecimal format
CB84000D001C001C
What is the source port no, Destination Port No, Total length of UDP Datagram, length of Data and the Client Process 6M CO4 L3

OR

9. a) What is addressing? Explain addressing concept in transport layer. 6M CO4 L2

b) What is congestion control? How does transport layer support in handling congestion? 6M CO4 L2

UNIT–V

10. a) Explain the concept of MIME in email transfer. 6M CO5 L2

b) What are cookies? Explain the process of Creating and Storing Cookies? 6M CO5 L2

OR

11. a) Explain about DNS in Internet? 8M CO5 L2

b) Write a short note on Audio Compression. 4M CO5 L2

*** End ***

Hall Ticket Number :										

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III B.Tech. I Semester Regular Examinations Dec 2022/Jan 2023

Principles of Programming Languages

(Computer Science and Engineering)

Max. Marks: 70 Time: 3 Hours

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Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. In Part-A, each question carries **Two mark.**
3. Answer **ALL** the questions in **Part-A** and **Part-B**

PART-A

(Compulsory question)

1.	Answer ***all*** the following short answer questions (5 X 2 = 10M)		CO	BL
	a)	Explain about parsing.	CO1	L2
	b)	Write any two design issues for arithmetic expressions.	CO2	L3
	c)	Define pass by result.	CO3	L1
	d)	Write about exception propagation.	CO4	L3
	e)	What is type inferencing used in ML?	CO5	L1

PART-B

Answer *five* questions by choosing one question from each unit (5 x 12 = 60 Marks)

			Marks	CO	BL
		UNIT–I			
2.	a)	Define grammars, derivation and a parse tree.	6M	CO1	L1
	b)	Define CFG? What does it mean for CFG to be ambiguous?	6M	CO1	L1
		OR			
3.	a)	What are the main features of the programming paradigm with examples?	6M	CO1	L1
	b)	Explain about formal methods for describing syntax.	6M	CO1	L2
		UNIT–II			
4.	a)	Explain in detail various design issues of character string types.	6M	CO2	L2
	b)	What is a variable and what are the attributes of a variable? Elaborate on address of a variable.	6M	CO2	L2
		OR			
5.	a)	Explain associative arrays, their structure and operations.	6M	CO2	L2
	b)	List and explain design issues of pointers.	6M	CO2	L2,L3

UNIT–III

6.	a)	Explain how subprograms names are passed as parameters.	6M	CO3	L2
	b)	Define sub program. What are the distinct categories of Subprograms?	6M	CO3	L1
		OR			
7.	a)	Explain different types of parameter passing techniques.	6M	CO3	L2
	b)	Discuss the design issues of subprogram and its operations performed on them.	6M	CO3	L2

UNIT–IV

8.	a)	Discuss the design issues of Exception Handling.	6M	CO4	L2
	b)	Explain in detail abstract data types in java with examples.	6M	CO4	L2
		OR			
9.	a)	Define exception. Explain about exception handling mechanism in C++ using suitable example.	12M	CO4	L1,L2

UNIT–V

10.	a)	Explain about fundamentals of FPL.	6M	CO5	L2
	b)	Explain about Logic programming.	6M	CO5	L2
		OR			
11.	a)	What are the applications of logic programming? Explain	6M	CO5	L1
	b)	Discuss about goal statements in prolog.	6M	CO5	L2

*** End ***