Hall Ticket Number :										

R-20

Code: 20A551T

III B.Tech. I Semester Supplementary Examinations June 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 marks.**
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)	Define PEAS.	CO1	L1
b)	List out uninformed search techniques	CO2	L1
c)	What is proposition logic?	CO3	L1
d)	Write any two points about knowledge engineering.	CO4	L2
e)	Mention any two uses of Bayes' rule.	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)	Define a problem and its components. Explain how a problem solving agent works?	6M	CO1	L1
	b)	Explain the structure of intelligent agents.	6M	CO1	L4
		OR			
3.	a)	Describe the problem characteristics with an example.	6M	CO1	L1
	b)	Write short notes on rational agent.	6M	CO1	L2
		UNIT–II			
4.	a)	Explain in detail with examples (i) Iterative deepening search (ii) Bidirectional search	8M	CO2	L1
	b)	What types of control strategy is used in Crypt-arithmetic	4M	CO2	L2
		OR			
5.	a)	Explain the following local search strategies with examples. (i) Hill climbing (ii) Simulated annealing	8M	CO2	L4
	b)	Compare different uninformed search strategies in terms of the four evaluation criteria.	4M	CO2	L4

UNIT–III

6.	a)	Give a detail note on models for first order logic.	6M	CO3	L4
	b)	Discuss inference rules for quantifiers.	6M	CO3	L2

OR

7.	a)	Give a detail note on a generic knowledge-based agent.	6M	CO3	L1
	b)	Explain extended semantic networks for Knowledge Representation	6M	CO3	L3

UNIT–IV

8.	a)	Discuss about the language of planning problem briefly.	6M	CO4	L3
	b)	Explain partial order planning in detail.	6M	CO4	L1

OR

9.	a)	Discuss the basic representations for planning?	6M	CO4	L1
	b)	What are the steps involved in knowledge engineering? Explain?	6M	CO4	L5

UNIT–V

10.	a)	Explain Fuzzy set operations with suitable Examples.	6M	CO5	L4
	b)	Explain about certainty factor theory.	6M	CO5	L4

OR

11.	a)	Write a short note on Bayesian networks?	6M	CO5	L6
	b)	What is the significance of membership function? Explain the fuzzy rule base system.	6M	CO5	L1

*** End ***

Hall Ticket Number :										

R-20

Code: 20A552T

III B.Tech. I Semester Supplementary Examinations June 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)

1. Answer ***all*** the following short answer questions (5 X 2 = 10M)

		CO	BL
a)	What is WAN? How is it different from MAN.?	CO1	L2
b)	What is a Window? What should be the maximum size of sender's window? Justify your statement.	CO2	L2
c)	What is optimality principle?	CO3	L1
d)	What is error detection? Does UDP support it? Justify?	CO4	L2
e)	What are the protocols used in Electronic mail. What are the functionalities of them?	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)	Can you explain components and categories of data communication in detail?	6M	1	2
	b)	Write short notes on Guided transmission media co-axial cable and Fiber-optic cable?	6M	1	2
		OR			
3.	a)	Explain the network topologies in detail.	6M	1	2
	b)	What is the essential difference between message switching and packet switching?	6M	1	2
		UNIT–II			
4.	a)	Differentiate pure ALOHA and slotted ALOHA protocols.	6M	2	2
	b)	How would you interpret in your own words about Ethernet protocol in Wired LANs?	6M	2	2
		OR			
5.	a)	The following character encoding is used in a data link protocol: A: 01000111; B: 11100011; FLAG: 01111110; ESC: 11100000 Show the bit sequence transmitted (in binary) for the four-character frame: A B ESC FLAG when each of the following framing methods are used: (i) Character count. (ii) Flag bytes with byte stuffing. (iii) Starting and ending flag bytes, with bit stuffing.	6M	2	3
	b)	Imagine a sliding window protocol using so many bits for sequence numbers that wraparound never occurs. What relations must hold among the four window edges and the window size, which is constant and the same for both the sender and the receiver.	6M	2	3

UNIT–III

6.	a)	Give three examples of protocol parameters that might be negotiated when a connection is set up.	6M	3	3
	b)	A large number of consecutive IP address are available starting at 198.16.0.0. Suppose that four organizations, A, B, C, and D, request 4000, 2000, 4000, and 8000 addresses, respectively, and in that order. For each of these, give the first IP address assigned, the last IP address assigned, and the mask in the w.x.y.z/s notation.	6M	3	3

OR

7.	a)	Describe a way to reassemble IP fragments at the destination.	6M	3	2
	b)	ARP and RARP both map addresses from one space to another. In this respect, they are similar. However, their implementations are fundamentally different. In what major way do they differ?	6M	3	3

UNIT–IV

8.	a)	In a TCP connection, the initial sequence number at the client site is 2171. The client opens the connection, sends three segments, the second of which carries 1000 bytes of data, and closes the connection. What is the value of the sequence number in each of the following segments sent by the client? i) The SYN segment ii) The data segment iii) The FIN segment	6M	4	3
	b)	Identify fields in TCP Header that are not present in UDP Header along with details and give reasons for the missing fields.	6M	4	3

OR

9.	a)	Explain various services of Transport Layer.	6M	4	
	b)	The following is part of a TCP header dump (contents) in hexadecimal format. E293 0017 00000001 00000000 5002 07FF... i) What is the source & destination port number? ii) What is the sequence number & acknowledgment number? iii) What is the length of the header? iv) What is the type of the segment? v) What is the window size?	6M	4	3

UNIT–V

10.	a)	What role does the DNS resolver play in the DNS system? What are the various resolution mechanisms?	6M	5	2
	b)	Explain SNMP message format.	6M	5	2

OR

11.	a)	Explain about SMTP Protocol & mail transfer phases.	6M	5	2
	b)	Explain about JPEG compression?	6M	5	2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A55DT

III B.Tech. I Semester Supplementary Examinations June 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 marks.**
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)	Write BNF notation for if-else statements.	CO1	L3
b)	What mixed-mode assignments are allowed in C and Java?	CO2	L1
c)	Explain about generic methods.	CO3	L2
d)	What are the design issues for exception handling in JAVA?	CO4	L1
e)	What are the three features of Haskell that makes very different from schema?	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.	Explain language evaluation criteria and the characteristics that affect them.	12M	CO1	L2
OR				
3. a)	Write notes on context free grammars. How to identify whether a grammar is unambiguous?	6M	CO1	L3
b)	Discuss about Context-free grammar and regular expression? Give the parse tree of a following statement: A = (B+C) * (D / E).	6M	CO1	L2
UNIT–II				
4. a)	Explain in detail arrays, indices, subscript bindings, and array categories.	6M	CO2	L2
b)	Explain various primitive data types with suitable examples.	6M	CO2	L2
OR				
5. a)	Discuss about type-checking.	6M	CO2	L2
b)	Explain about static, fixed stack dynamic, and dynamic arrays.	6M	CO2	L2

UNIT–III

6.	a)	Discuss about scope and lifetime of a variable. What are the advantages of dynamic scoping over static scoping?	6M	CO3	L2
	b)	Explain how subprogram is overloaded? Give examples.	6M	CO3	L2

OR

7.	a)	List different parameter passing methods and explain each of them with an example.	6M	CO3	L2,l3
	b)	Briefly discuss design issues of functions.	6M	CO3	L2

UNIT–IV

8.	a)	Explain in detail abstract data types in C++ with examples.	6M	CO4	L2
	b)	Explain about different mechanisms to implement polymorphism in C++.	6M	CO4	L2

OR

9.		Define exception propagation. Explain about exception handling mechanism in Java using suitable example.	12M	CO4	L1,l2

UNIT–V

10.	a)	For what sort of application logic programming is useful? Briefly explain.	6M	CO5	L1
	b)	Discuss about basic elements of prolog. Give examples.	6M	CO5	L2

OR

11.	a)	Write a LISP function fib(n) that computes nth Fibonacci number.	6M	CO5	L3
	b)	Explain the principles of ML.	6M	CO5	L2

*** End ***

Hall Ticket Number :										

R-20

Code: 20A553T

III B.Tech. I Semester Supplementary Examinations June 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 marks.**
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)	Distinguish between software process and project.	CO1	L2
b)	Specify the significance of Software requirements specification.	CO2	L1
c)	Explain abstraction in the context of design concepts.	CO3	L1
d)	What is integration testing?	CO4	L1
e)	List out the Software Quality Assurance activities.	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.	Explain the concept of Generic process model, assessment of process and improvement techniques.	12M	CO1	L2
	OR			
3. a)	Describe characteristics of good software.	4M	CO1	L2
b)	Explain perspective and specialized process models.	8M	CO1	L1
	UNIT–II			
4. a)	Explain the process of negotiating and validating the requirements.	8M	CO2	L2
b)	Demonstrate the data modeling concepts.	4M	CO2	L3
	OR			
5.	Specify the purpose of Requirements Engineering? Briefly describe the different tasks involved in Requirement Engineering Process.	12M	CO2	L3

UNIT–III

6.		Illustrate different architecture styles in software design.	8M	CO3	L3
		Differentiate Coupling and Cohesion in a software design process.	4M	CO3	L3
		OR			
7.		Describe the basic Design Principles and guidelines for Component-level Design.	12M	CO3	L2
		UNIT–IV			
8.	a)	Specify the differences between Testing & Debugging.	4M	CO4	L3
	b)	Illustrate the steps in Integration testing & System testing.	8M	CO4	L3
		OR		CO4	
9.		Illustrate the Golden Rules of Use Interface and explain how these rules will affect the User Interface design.	12M	CO4	L2
		UNIT–V			
10.	a)	What is risk management? Explain how to select the best risk reduction technique when there are many ways of reducing a risk?	6M	CO5	L3
	b)	Illustrate briefly different types of project estimation techniques.	6M	CO5	L3
		OR			
11.	a)	Explain different levels of Capability Maturity Model.	6M	CO5	L3
	b)	What are the metrics used for software maintenance? Specify the types of software maintenance.	6M	CO5	L3

*** End ***