Reg. No.															

B.Tech. DEGREE EXAMINATION, NOVEMBER 2023

Sixth Semester

18CSC312J – ARTIFICIAL INTELLIGENCE AND APPLICATIONS IN CLOUD COMPUTING

(For the candidates admitted from the academic year 2020-2021 & 2021-2022)

Note:

(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.

(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours Max. Marks: 100

PART – A (20 × 1 = 20 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
1. External actions of the agent is selected by (A) Perceivance (B) Performance (C) Learning (D) Actuator	1	1	1	1
2. What is the problem space of means-end analysis? (A) An initial state and one or more goal state (B) One or more initial states and one goal state (C) One or more initial states and one or more goal states (D) One initial state and one goal state	1	1	1	2
3. Which of the following is the input and output of search algorithm respectively? (A) Sequence of actions, parameters (B) Parameters, sequence of actions (C) Solution, problem (D) Problem, solution	1	1	1	3
4. A problem in search space is defined by which one of the following state (A) Intermediate state (B) Last state (C) Initial state (D) Dead state	1	1	1	1
5. Which AI technique enables the computers to understand the associations and relationships between objects and events? (A) Heuristic processing (B) Cognitive science (C) Relative symbolism (D) Pattern matching	1	1	2	5
6. Which of the following is the complexity of minimax algorithm? (A) Same as BFS (B) Space-bm and time-bm (C) Time-bm and space-bm (D) Same as DFS	1	2	2	1
7. Which value is assigned to alpha and beta in the alpha-beta pruning? (A) Alpha = max (B) Beta = min (C) Beta = max (D) Both alpha = max and beta = min	1	2	2	2
8. Adversarial search problem uses (A) Competitive environment (B) Co-operative environment (C) Neither competitive nor cooperative (D) Both competitive and cooperative	1	1	2	1

9. _____ can be viewed as a single lateral of disjunction. 1 1 3 1

(A) Multiple clause (B) Combine clause
(C) Unit clause (D) Hybrid clause

10. Which is used to construct complex sentences? 1 1 3 1

(A) Symbols (B) Connectives
(C) Logical connectives (D) Terminals

11. The values of the set membership is represented by 1 1 3 4

(A) Discrete set (B) Degree of truth
(C) Probabilities (D) Both degree of truth and probabilities

12. Fuzzy logic is usually represented as 1 1 3 1

(A) If-then-else rules (B) If-then rules
(C) Both if-then-else and if-then rules (D) If-else rules

13. The algorithm that explores the domain in a depth first manner is 1 1 4 5

(A) Backtracking (B) Forward checking
(C) Arc consistency (D) Strategic retreat

14. In a rule-based system, procedural domain knowledge is in the form of 1 1 4 2

(A) Production rules (B) Rule interpreters
(C) Meta-rules (D) Control rules

15. Method in which previously calculated probabilities are revised with values of new probability is called 1 1 4 1

(A) Revision theorem (B) Bayes theorem
(C) Dependent theorem (D) Updation theorem

16. How many types of feedback does reinforcement provide? 1 2 4 3

(A) 1 (B) 2
(C) 3 (D) 4

17. Choose the correct relationship of cloud services to customers. 1 1 5 4

(A) One-one (B) One-many
(C) Many-one (D) Many-many

18. Which is the most important concern of cloud computing? 1 1 5 1

(A) Cost (B) Space
(C) Security (D) Platform

19. Which of the following is a phase of the deployment process? 1 1 5 1

(A) Selecting cloud computing provider (B) It architecture development
(C) Business architecture development (D) Transformation plan development

		Marks	BL	CO	PO
20.	Cloud computing architecture is a combination of (A) Service oriented architecture and grid computing (B) Utility computing and event-driven architecture (C) Service oriented and event-driven architecture (D) Virtualization and event driven architecture	1	1	5	1

PART – B (5 × 4 = 20 Marks)
Answer **ANY FIVE** Questions

		Marks	BL	CO	PO
21.	Replace every letter in the puzzle with single number ranging between 0 to 9 such that the resulting summation if correct. Send + More = Money.	4	3	1	4
22.	Write an algorithm to reach the goal state from initial state using A^* algorithm.	4	1	1	2
23.	Construct a problem formulation and representation of 8-queens problem.	4	4	2	1
24.	Differentiate between commutative and associative rules that can be applied when reasoning in prepositional logic.	4	2	3	1
25.	List down the steps involved in solving a planning problem using a state-space approach.	4	2	4	4
26.	Explain the support vector machine with an example.	4	1	4	3
27.	List down the various types of MIaaS and explain briefly.	4	2	5	1

PART – C (5 × 12 = 60 Marks)
Answer **ALL** Questions

		Marks	BL	CO	PO
28. a.	Explain the following in detail (i) Applications of AI (ii) Advantages and disadvantages of AI	6 6	1	1	1
	(OR)				
b.	Describe the data acquisition and learning aspects in AI.	12	2	1	3
29. a.	Find out the BFS solution for	12	3	2	4

S	12	14	16	X
1	10	G	19	20
2	8	X	21	17
3	5	7	18	15
4	6	9	11	13

(OR)

b.	Find out the DFS solution for	12	3	2	1

S	21	20	19	15
1	22	G	18	14
2	23	17	16	13
3	6	7	12	11
4	5	8	9	10

30. a.	Explain resolution and solve the following (i) John likes all kind of food (ii) Apple and vegetable are food (iii) Anything anyone eats are not killed is food (iv) Anil eats peanuts and still alive (v) Harry eats everything that Anil eats Prove by resolution that john likes peanuts.	12	2	3	4
	(OR)				
b.	Explain about fuzzy logic in detail.	12	1	3	2
31. a.	Write short notes on		1	4	1
	(i) Distributed learning	6			
	(ii) Speed-up learning	6			
	(OR)				
b.	Discuss about the following in detail		3	4	4
	(i) Non-linear planning	6			
	(ii) Conditional and reactive planning	6			
32. a.	List down the steps involved in deploying machine learning models and cloud and explain them in detail.	12	3	5	2
	(OR)				
b.	Explain the following in detail		1	5	1
	(i) Need for MLaaS	6			
	(ii) Functions of MLaaS	6			

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