Q. Code:360987

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Fifth-Semester

CS18052 – FUNDAMENTALS OF ARTIFICIAL INTELLIGENCE

(Common to EE & CS)

(Regulation 2018/2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	To understand the characteristics of Intelligent agents, define AI and learn about production systems.	**1**
CO 2	Learn to use appropriate search strategies for solving AI problems.	**2**
CO 3	Understand, represent knowledge and use first order logic in solving AI problems.	**3**
CO 4	To know about current applications of AI and compare some of them.	**3**
CO 5	To design an expert system from the concepts learned	**4**

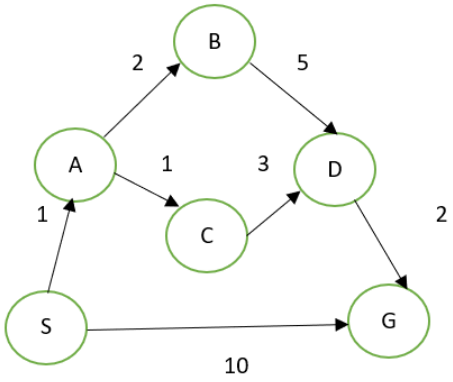
PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	What are the steps involved in problem solving?	**1**	**1**
2.	List down the characteristics of intelligent agent.	**1**	**1**
3.	Differentiate informed and uninformed search strategies.	**2**	**2**
4.	What is stochastic game?	**2**	**2**
5.	What are the different approaches in knowledge representation?	**3**	**2**
6.	Differentiate Propositional and Predicate Logic.	**3**	**2**
7.	What is the NLP used for?	**4**	**2**
8.	What is the use of AI in planning?	**4**	**2**
9.	Discuss the role of expert system shell.	**5**	**3**
10.	Illustrate how meta-knowledge is represented in rule-based expert systems?	**5**	**3**

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	Explain in detail, the structure of different intelligent agents.	**(14)**	**1**	**1**
	(OR)			
(b)	Briefly discuss about the characteristics of production systems.	**(14)**	**1**	**1**
12. (a)	Traverse the given graph to find the optimal path cost from S to G using the A* algorithm.	**(14)**	**2**	**3**



State	h(n)
S	5
A	3
B	4
C	2
D	6
G	0

(OR)

(b)	Summarie constraint satisfaction strategy to solve the following cryptarithmetic problem and also give the detailed description of the steps involved in reaching the solution.	**(14)**	**2**	**2**

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    BASE
+   BALL
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   GAMES
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13. (a)	Consider the following sentences and prove that "John likes peanuts" using forward chaining and backward chaining.	**(14)**	**3**	**3**

- John likes all kinds of food.
- Apples are food.
- Chicken is food.
- Anything anyone eats and isn't killed by is food.

- Bill eats peanuts and is still alive.
- Sue eats everything that Bill eats.

(OR)

(b)	Consider the following facts and using resolution find the answer for the query "What course would Steve like?" • Steve only likes easy courses. • Science courses are hard. • All the courses in the basketweaving department are easy. • BK301 is a basketweaving course.	**(14)**	**3**	**3**
14. (a)	Illustrate the key approaches in machine translation.	**(14)**	**4**	**3**
	(OR)			
(b)	Explain briefly about the information retrieval.	**(14)**	**4**	**3**
15. (a)	With a neat diagram and Elaborate the architecture of an expert system.	**(14)**	**5**	**3**
	(OR)			
(b)	Write a detailed note about the MYCIN expert system and its functioning.	**(14)**	**5**	**3**

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Give a PEAS description for the given agent types: (i) Interactive English tutor (ii) Part-picking robot (iii) Refinery controller (iv) Medical diagnosis system (v) Satellite image analysis system.	**(10)**	**1**	**5**

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