

Total No. of Questions : 8]

**PB4022**

SEAT No. :

[Total No. of Pages : 3

**[6262]-375**

**T.E. (Honors)**

**ARTIFICIAL INTELLIGENCE**

**(2019 Pattern) (Semester - II) (310303)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.

**Q1) a)** Represent the following sentences into formulas in predicate logic, **[9]**

- i) John likes all kinds of food
- ii) Apples are food.
- iii) Chicken are food.
- iv) Anything anyone eats and isn't killed by is food.
- v) Bill eats peanuts and is still alive
- vi) Sue eats everything Bill eats

**b)** What is knowledge representation in propositional logic. Compare propositional logic and predicate logic. **[8]**

**OR**

**Q2) a)** Explain Unification algorithm with suitable example. **[9]**

**b)** Explain various operators used in propositional logic for knowledge base building. **[8]**

**P.T.O.**

**Q3) a) Explain** [6]

i) Supervised learning.

ii) Unsupervised Learning.

b) Explain the architecture of Artificial Neural Network. [6]

c) With the help of an architecture diagram explain multilayer feed forward artificial neural network. [6]

OR

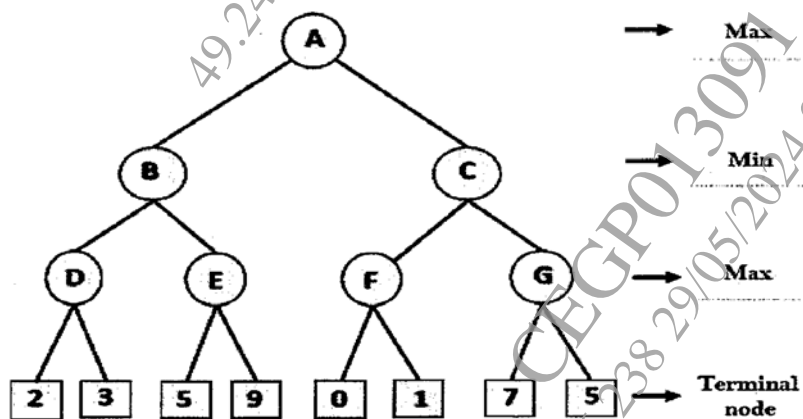
**Q4) a) What is Artificial Neural Network? Give two applications of artificial neural networks in detail.** [6]

b) Explain how Decision Trees are used in Learning. [6]

c) Explain how Support Vector Machines are used for classification with suitable example. [6]

**Q5) a) Illustrate Mini-Max search for the tic-tac-toe game.** [9]

b) Solve given two player search tree using Alpha-beta pruning. [8]

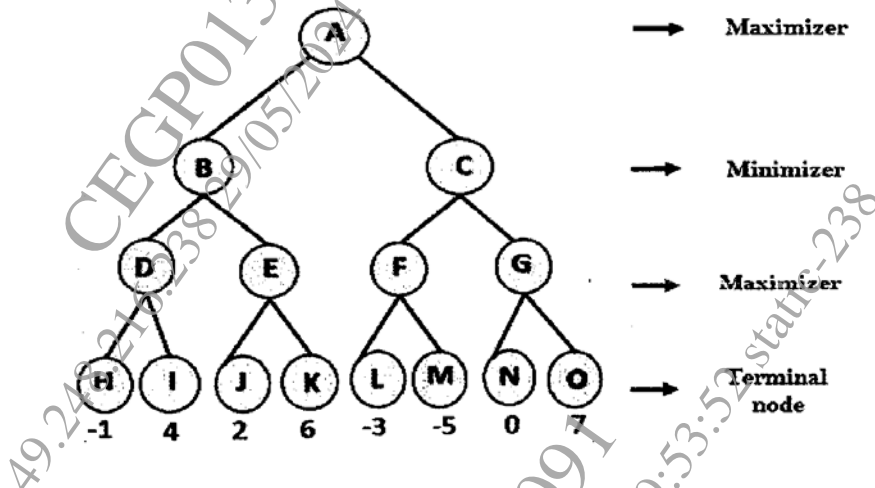


OR

Q6) a) Write a note on [9]

- i) Types of Games in AI
- ii) State-of-the-art Game Programs

b) Solve the given game tree using min max algorithm. [8]



Q7) a) Represent the architecture of an expert system, label the various components in the diagram and explain. [9]

b) Explain forward chaining and backward chaining for a simple example. [9]

OR

Q8) a) Explain the applications of Natural Language Processing. [9]

b) What is NLP. Explain all five phases of NLP. [9]

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