Total No. of Questions : 8]

SEAT No. :

P470

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T.E. (Computer Engineering) (Honors)

ARTIFICIAL INTELLIGENCE AND MACHINE

(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, and Q.7 or Q8.***
2) ***Neat diagrams must be drawn whenever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) a) Explain Unification algorithm with suitable example. **[9]**

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

OR

Q2) 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) Explain various operators used in propositional logic for knowledge base building. **[8]**

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Q3) 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]**

OR

Q4) a) Explain **[6]**

i) Supervised learning.

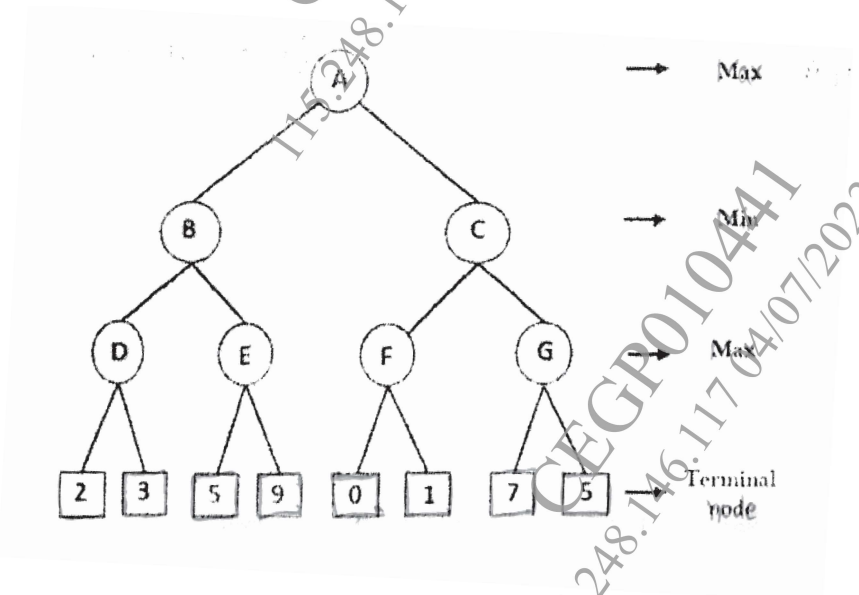
ii) Unsupervised Learning.

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]**

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

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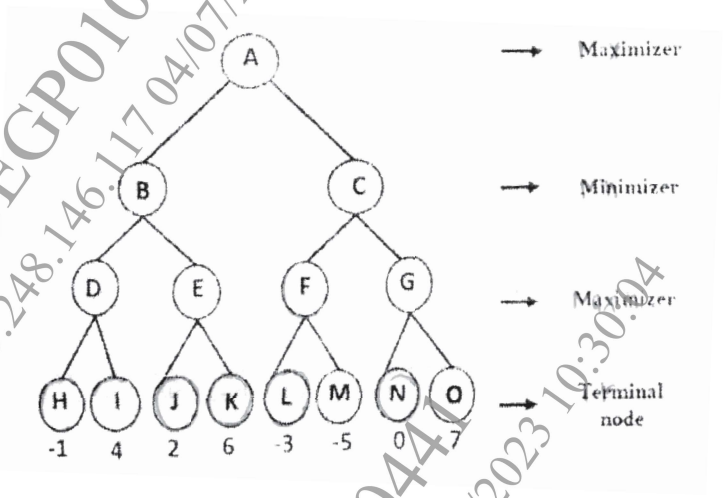
Q6) a) Write a note on **[9]**

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

OR

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

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

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