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Total No. of Questions : 12]

SEAT No. :

P844

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[4659]-103

B.E. (Electronics &Telecommunication) (Semester - II)

a - ARTIFICIAL INTELLIGENCE

(2008Pattern) (Elective-IV)

Time : 3Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answer three questions from Section - I and three questions from Section - II.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Use of logarithmic tables, slide rule, mollier charts, electronic pocket calculator and steam tables is allowed.***
5) ***Assume suitable data if necessary.***

SECTION-I

Q1) a) Explain the different architectures of agents and give at least two examples where these agents are used. **[10]**

b) Compare Depth First and Breath First search methods. **[8]**

OR

Q2) a) Give PEAS descriptors for the following: **[10]**

i) Medical Diagnosis System,

ii) Interactive English Tutor.

b) Write C pseudo code for depth limit search method. Explain its merits and demerits. **[8]**

Q3) a) Compare the different uninformed searching strategies with respect to different parameters. **[8]**

b) Explain A* algorithm and write its C pseudo code. **[8]**

OR

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Q4) a) Explain hill climbing algorithm. Explain plateau, ridge, local maxima and global maxima. **[8]**

b) Define Heuristics. Explain the significance of Heuristic function in the informed search with suitable example. **[8]**

Q5) a) Explain the working of Unification algorithm with suitable example. **[8]**

b) State the rules and steps for converting a given well predicate logic statements to clausal form. **[8]**

OR

Q6) a) Explain backward chaining algorithm with suitable example. **[6]**

b) Consider the following axioms: **[10]**

If a triangle is equilateral then it is isosceles.

If a triangle is isosceles then two sides AB & AC are equal.

If AB&AC are equal then angle B and C are equal.

ABC is an equilateral triangle.

i) Represent these facts in predicate logic.

ii) Use resolution to prove: "Angle B is equal to angle C".

SECTION-II

Q7) a) What are the different learning methods? Explain them in short. **[10]**

b) Which are the different ways to assess the performance of learning algorithm? **[8]**

OR

Q8) a) Explain the decision tree algorithm with suitable example. **[10]**

b) Explain in detail architecture of artificial neural network. **[8]**

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Q9) a) What is difference between expert system and traditional system? Comment on the advantages and disadvantages of expert system. **[8]**

b) Design phases of an expert system to diagnose childhood disease. **[8]**

OR

Q10)a) Explain Waltz algorithm with example and comment on its limitations. **[8]**

b) What is the perception? Give detailed structures of it. **[8]**

Q11)a) What is NLP? Explain all the five phases of NLP. **[8]**

b) Parse each of the sentences using top-down and bottom-up approach. **[8]**

i) Mary watered the plants.

ii) The brown dog ate the bone.

OR

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Q12)a) Explain the Syntactic analysis with suitable example. **[8]**

b) Explain the Semantic analysis with suitable Example. **[8]**

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