

AU – 2872

Seventh Semester B. E. (Electronics and Telecommunication Engineering)
Examination

ARTIFICIAL INTELLIGENCE

Paper – 7 XT 04

(USC – 10632)

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) Due credit will be given to neatness and adequate dimensions.
(2) Assume suitable data wherever necessary.
(3) Diagrams and Chemical equations should be given wherever necessary.
(4) Illustrate your answer wherever necessary with the help of neat sketches.
(5) Use pen of Blue/Black ink/refill only for writing the answer book.

1. (a) Explain in detail the progress of Artificial Intelligence. 7
(b) Explain the following w. r. t. to AI
(i) Searching
(ii) Pattern Matching. 6

OR

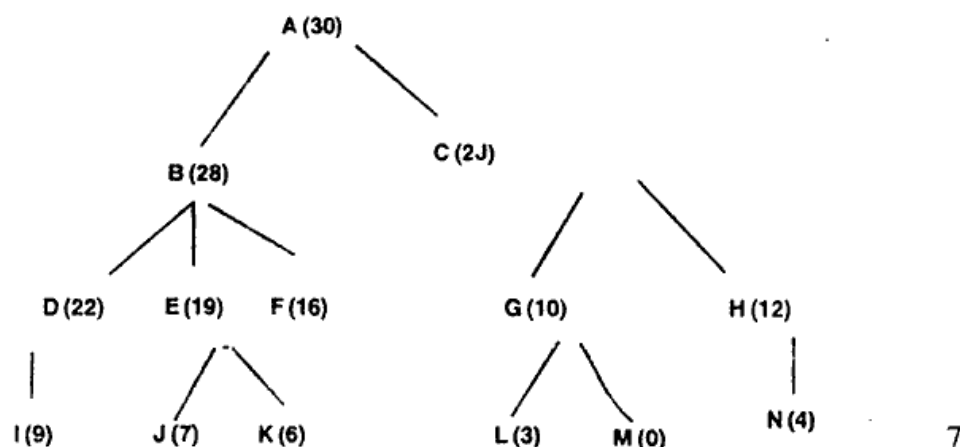
2. (a) Define Intelligence ? What is intelligent behaviour of machine ? 7
(b) Explain the role of computer in Artificial Intelligence. 6
3. (a) Explain the propositional logic and predicate logic with examples. 7
(b) Transfer the following sentences into conjunctive normal form.
(i) $(P \rightarrow Q) \rightarrow R$
(ii) $P \vee (\bar{P} \text{ and } Q \text{ and } R)$
(iii) $(\bar{P} \text{ and } Q) \vee (P \text{ and } Q) \text{ and } S.$ 7

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P.T.O.

OR

4. (a) Discuss resolution principles and define some of them. 7
(b) What is quantifiers ? What are the various quantifiers ? Explain. 7
5. (a) Using the search tree given below, list the elements of queue just before the next node is extended. Use the first search where the number corresponds to estimated cost for each goal for each corresponding node. Repeat the above problem when the cost of node B is changed to 18



- (b) Explain in detail applications of search techniques in game playing and planning. 6

OR

6. (a) What is Heuristic technique ? Explain Hill climbing technique. 7
(b) Explain AND – OR Graph with the help of examples. 6
7. (a) What do you mean by expert system ? Explain in detail with the help of block diagram. 7
(b) What are the various errors in the development of Expert System ? Explain. 6

OR

8. (a) Explain the following expert system building blocks :—
(i) Inductive tools (ii) Hybrid tools 7

- (b) Explain the goals targated by expert system builders in the development of expert system. 6

9. (a) Explain back propagation algorithm for training neural networks with the help of flow chart. 7
(b) What is fuzzification ? Describe various methods of fuzzification. 7

OR

10. (a) Derive the relation for a generalised delta rule for a feed forward neural network with a single hidden layer. 7
(b) What is fuzzy relation ? Explain various properties of fuzzy relations. 7
11. (a) What is genetic algorithm ? Specify algorithm in detail. How is it biologically evolved ? 7
(b) What is Swarm Intelligence ? Explain two popular Swarm Intelligent technique. 6

OR

12. (a) What is genetic operator ? How genetic algorithms are used to find set of optimal weights ? 7
(b) Explain in detail with application of Ant Colony optimisation. 6

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