

Roll No.

67199

MCA 4th Semester CBCS Scheme

w.e.f. 2017-18

Examination – May, 2019

ARTIFICIAL INTELLIGENCE & EXPERT SYSTEM

Paper : 17MCA34C3

Time : Three Hours] [Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Question No. 1 is *compulsory*. All questions carry equal marks.

1. Compulsory question :

- What is production system ? Name its components also.
- What is admissibility of an algorithm ?
- What is Unification ? Give example.
- Define Partitioned semantic net. Give example also.
- Discuss the role of certainty factor in knowledge representation ?

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- Differentiate supervised and unsupervised learning.
- Name the functions used to add the data in knowledge base in Prolog with example.
- Discuss the structure of Prolog program.

UNIT – I

- Differentiate blind search and heuristic search. When does blind search become better than heuristic search ? Also discuss the properties of heuristic search algorithms.
- Why is it important that an expert system be able to explain the why and how question related to problem solving ? Discuss the role of inference engine in expert system to solve the problem.

UNIT – II

- How ESDLC is related with software engineering ? Why prototype construction and formalization are important phases in ESDLC. Explain.
- What is Truth Maintenance System ? Explain its different types and how TMS is used to deal the uncertainty of knowledge.

UNIT – III

- What are the differences between biological and artificial neurons ? What is the role of back propagation network in ANN ? Discuss with an example.

67199- -(P-3)(Q-9)(19) (2)

7. (a) What is fuzzy set ? What is the membership function of a fuzzy set ? Can a fuzzy membership be TRUE and FALSE at the same time ? Illustrate with example.
- (b) Discuss the inference process for fuzzy expert system.

UNIT – IV

8. What is matching ? Discuss the role of Backtracking in matching. How fail and cut predicates are used in backtracking ? Give example also.
9. Explain with examples :
- (a) Compound object
 - (b) Recursion
 - (c) Dynamic database
 - (d) Types and components of list

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