

9. (a) What is hybrid system ? Discuss the working of neuro-fuzzy systems.
- (b) How learning can be applied in biological sequence alignment ? Explain.
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Roll No.

67102-N

**MCA 3rd Semester (MCA 2 Year
Programme) w.e.f. 2021-22
Examination – July, 2022
ARTIFICIAL INTELLIGENCE & COMPUTATIONAL
INTELLIGENCE**

Paper : 21MCA23C2

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 Units. Question No. 1 is compulsory. All questions carry equal marks.

1. Compulsory Questions :

- (a) What is Artificial Intelligence ? Discuss different types of artificial intelligence.
- (b) What is the role of updation facility in expert system ?
- (c) Define skolemization with example.
- (d) How reasoning can be done with semantic net ?
- (e) What is content addressable memory ?
- (f) List out various operation of Genetic algorithm with diagrammatic notation.

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- (g) How normal fuzzy set is different from sub-normal fuzzy set ?
- (h) What is the role of computational intelligence in Drug Design ?

UNIT – I

- 2. (a) Differentiate between blind search and heuristic search. When does blind search become better than heuristic search ? Illustrate with an example.
- (b) How knowledge base and inference engine in expert system are used to store and generate the knowledge ?
- 3. (a) What is problem ? Discuss the characteristics and representation methods of problem.
- (b) What are the characteristics of expert system ? What is the purpose of evaluation and long-term evolution of an expert system ?

UNIT – II

- 4. (a) What is certainty factor ? How knowledge is represented when certainty is not associated with statements ? Discuss in context of belief and hypothesis.
- (b) What is conflict resolution ? Explain various strategies used to resolve the conflicts.

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- 5. (a) What is resolution ? Discuss its different types with examples. "Resolution can be used for unification". Justify the statement.
- (b) Define knowledge acquisition. Discuss different techniques to acquire the knowledge.

UNIT – III

- 6. (a) What is the building block of perception ? Explain the training process of perception with diagram.
- (b) What is selection in GA ? Explain different selection method of GA example.
- 7. (a) Sketch the architecture of ART-1 network and discuss its training algorithm.
- (b) What is optimization ? How optimized result can be achieved on the basis of Ant Colony optimization method ?

UNIT – IV

- 8. (a) Why is approximate reasoning important in fuzzy logic ? What are different modes of approximate reasoning ? Discuss.
- (b) What is fuzzy inference system ? Discuss the working and methods of FIS.

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