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Unit-IV

8. (a) Why is approximate reasoning important in fuzzy logic? What are different modes of approximate reasoning? Discuss.
- (b) What is neuro-fuzzy system? Discuss the architecture and functioning of NFS.
9. (a) What is membership function? Discuss the properties of membership function with example and graphical representation.
- (b) How learning can be applied in share market analysis? Explain.

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[Encl. : Graph Paper

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(graph paper)

M.C.A. 3rd Semester (MCA 2 Year Programme)
w.e.f. 2021-22, Examination, December-2022
ARTIFICIAL INTELLIGENCE AND
COMPUTATIONAL INTELLIGENCE
Paper-21MCA23C2

Time allowed : 3 hours]

[Maximum marks: 80

Note: Attempt five questions in all. Question No. 1 is compulsory. In addition to compulsory question, attempt four more questions selecting one question from each unit.

1. Compulsory Question

- (a) What are the characteristics of problem?
- (b) How cognitive behavior is used in expert system?
- (c) What is the use of support list justification?
- (d) How reasoning can be done with script?
- (e) What is threshold?
- (f) Write down the steps of general GA.
- (g) What are linguistic variables? Give example also.
- (h) What is the role of computational intelligence in biological sequence alignment?

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Unit-I

2. (a) What is blind search? Differentiate between depth first and iterative deepening search with appropriate example. Also discuss the search properties in terms of both search techniques.
 - (b) What is expert system? Draw and explain the architecture of expert system. How inference engine is used to generate the knowledge?
 3. (a) What is production system? Discuss the components and characteristics of production system. Also Specify the features of production rules.
 - (b) What is the purpose of formalization? How formalization is used to design, test and implement expert system?
- Unit-II**
4. (a) What is Non-monotonic reasoning? How uncertainty can be handled with certainty factor? Discuss with example.

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Unit-III

- (b) What is matching? How matching can be done? Also discuss the role of backtracking in matching.
 5. (a) What is inferencing? Explain various inference rules with example and why resolution is considered as inference rule.
 - (b) Define knowledge acquisition? Discuss different techniques to acquire the knowledge.
- Unit-III**
6. (a) Discuss the architecture and training algorithm of back propagation network. Also specify merits and demerits of BPN.
 - (b) What is recombination in GA? Explain various recombination techniques of GA with 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 Honey-bee optimization method?

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