B.E. Seventh Semester (Information Technology) (CGS)

10753 : Elective - I : Artificial Intelligence & Expert Systems : 7 IT 05

P. Pages : 2 | AU - 2924

Time : Three Hours | Max. Marks : 80

* 0 2 8 6 *

Notes : 1. Illustrate your answer necessary with the help of neat sketches.
2. Use of pen Blue/Black ink/refill only for writing book.

SECTION – A

1. a) Solve Water-Jug problem; **7**
You are given two jugs. A 4 litre one & 3 litre one, neither has any measuring markers on it. There is a pump that can be use to fill the jugs with water. How can you get exactly two litre water into 4 litre jug?

b) What is artificial intelligence? Justify the importance of AI in current scenario of I.T. **7**

OR

2. a) What are the different problem characteristics? Explain problem decomposition technique. **7**

b) Given an example of a problem for which BFS would work better than DFS. **7**

3. a) Explain A* algorithm with example. **7**

b) Explain following **6**

i) Best First search

ii) Hill climbing method

OR

4. a) What is heuristic function? Explain & define some heuristic function to solve a problem? **7**

b) Explain AND-OR graph with the help of example. **6**

5. Explain predicate logic in brief? **13**
Represent the following sentence in predicate form
i) "Marcus was a man"
ii) "Marcus was a Pompeian"
iii) "All Pompein were Romans"
iv) "Caesar was ruler"
v) "All Romans were either loyal to Caesar or hated him".
vi) "Every one is loyal to someone"
vii) "People only try to assassinate rulers they are not loyal to"
viii) "Marcus tried to assassinate Caesar"

OR

6. a) Explain algorithm to convert clause form with example. **6**

b) What are the approaches to knowledge Representation? Explain inheritable knowledge? 7

SECTION – B

7. a) Explain about Augmenting problem solver. 7

b) Explain implementation of Breadth first search. 6

OR

8. a) What is certainty factor? How to calculate certainty factor? 6

b) Explain logic for non-monotonic reasoning in detail. 7

9. a) What is understanding? What makes understanding hard? 6

b) Explain syntactic & semantic analysis? 7

OR

10. a) Give & explain the steps for natural language processing. 7

b) What are the different common sense ontology? 6

11. a) Explain fuzzy terminology? 7

b) Explain knowledge acquisition process in Expert system. 7

OR

12. a) Explain significance of genetic operator in detail. 7

b) Explain fuzzification & defuzzification with example. 7

******