

Code No: R41129

R10**Set No. 1**

IV B.Tech I Semester Supplementary Examinations, February/March - 2018

ARTIFICIAL INTELLIGENCE

(Information Technology)

Time: 3 hours**Max. Marks: 75****Answer any FIVE Questions****All Questions carry equal marks**

- 1 a) How to understand AI in terms of intelligence, knowledge, reasoning, learning and cognition? Explain. [8]
b) What is soft computing? Explain the relationship with current trends of AI. [7]
- 2 a) Explain various exhaustive search techniques and analyze their time and space complexities. [8]
b) What is backward pruning? Explain how it can be used for reducing the number of tree branches explored. [7]
- 3 a) Convert the given formulas to its CNF and explain the laws used in it.
i) $(\sim A \rightarrow B) \wedge (C \wedge \sim A)$
ii) $((p \wedge q) \vee (r \wedge s)) \vee (\neg q \wedge (p \vee t))$ [8]
b) Describe semantic tableau system in propositional logic and its rule. And also construct semantic tableau for $(A \wedge \sim B) \wedge (\sim B \rightarrow C)$. [7]
- 4 a) How to represent the knowledge? Explain different techniques of it. And give the semantic network representation of "Jovian participated in running race and won first prize". [8]
b) What is conceptual dependency theory? What are the procedural implications in it to represent the knowledge? Explain. [7]
- 5 a) Explain the applications of expert systems in planning & scheduling, design & manufacturing and process monitoring & control. [8]
b) Explain how black board system is used to solve complex, difficult and ill-structured problems. [7]
- 6 a) Write about the certainty factor theory application in measuring the uncertainty. [8]
b) Write about extensions of Bayes theorem on single hypothesis and multiple and chain of evidences. [7]
- 7 a) Explain in detail about case representation models and case retrieval methods. [8]
b) What are the components of learning system? Explain the process of learning by taking advice, macro operators and by analogy. [7]
- 8 Explain the following with respect to neural networks
a) Design issues of ANNs
b) The structure of multi layer feed forward networks
c) Training algorithm –Use of Delta rule [15]