TIT 502

Roll No.

Odd Semester Examination, 2019-20
B.Tech (IT, SEMESTER V)
ARTIFICIAL INTELLIGENCE

Time: 3 Hours

Max. Marks: 100

Total no.of printed pages: 1

Note: (i)   Attempt **ALL** questions.
   (ii) All Questions carry equal marks.
   (iii) Be precise in your answer.

$(5 \times 4 = 20)$

1. Attempt *any four* parts of the following:
   (a) What is the difference between knowledge representation and knowledge acquisition?
   (b) Write four properties a good system should possess for the knowledge representation in a particular domain?
   (c) State and explain the Branch-and-bound searching technique.
   (d) Define in your own words the following terms:
      i.   State
      ii. Agent
      iii. Successor function
      iv. Branching factor
   (e) Describe the role of computer vision in artificial intelligence.
   (f) Discuss the various types of machine learning with appropriate examples.

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2. Attempt *any four* parts of the following:
   (a) How is the Bayesian network powerful representation for uncertainty knowledge?
   (b) Explain how Predicate calculus can be used as a language for representing knowledge.
   (c) What is IQ? Do computer programs have IQs?
   (d) Are reflex actions rational? Are they intelligent?
   (e) What is the Turing test?
   (f) "The Mini-max procedure is depth first and depth limited" Justify?

$(10 \times 2 = 20)$

3. Attempt *any two* parts of the following:
   (a) What do you mean by constraint satisfaction problem? Explain constraint satisfaction algorithm?
   (b) Discuss MIN-MAX algorithm for game playing?
   (c) Explain Dempster - Shafer Theory

$(10 \times 2 = 20)$

4. Attempt *any two* parts of the following:
   (a) Explain how classification is done by using Bayes classifier.
   (b) Write short notes on the following:
      i.   Computer vision
      ii. Control strategy
      iii. Alpha-beta pruning
      iv. Multi-agent planning
   (c) Explain expert system with suitable example? Draw the basic structure of expert system.

$(10 \times 2 = 20)$

5. Attempt *any two* parts of the following:
   (a) Differentiate between conditional planning and continuous planning.
   (b) Describe the behaviour of A* search in terms of optimality, completeness and complexity.