Printed Pages—3   ECS801

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2875 **Roll No.** ☐☐☐☐☐☐☐☐☐

B.Tech.

(SEM. VIII) EVEN THEORY EXAMINATION 2012-13

ARTIFICIAL INTELLIGENCE

Time : 3 Hours   *Total Marks : 100*

Note :– Attempt **all** questions. **All** questions carry equal marks.

1. Attempt any **FOUR** parts of the following :   (5×4=20)

   (a) What stands for artificial intelligence ? How it differs from human intelligence ?

   (b) Some definitions of artificial intelligence are related to system that act like humans. How do you test that certain actions are human like actions that can be considered as intelligent ?

   (c) What is an agent program ? Describe a general model of learning agents.

   (d) Describe the role of artificial intelligence in the area of computer vision.

   (e) Write a short note on the state-of-the-art of artificial intelligence.

2. Attempt any **two** parts of the following :   (10×2=20)

   (a) Compare any two uniformed search techniques on the basis of following criterions : completeness, optimal and space-time complexity.

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(b) Describe A* search technique and prove that it is optimal and complete.

(c) Explain the local search algorithm by considering a suitable example.

3. Attempt any **two** parts of the following :   **(10×2=20)**

(a) Determine whether the following argument is valid :

"All artists are entertaining people. Some philosophers are mathematicians. Some agents are salesman. Only unentertaining people are salesmen. Therefore, some agents are not philosophers".

(b) Describe the role of hidden Markov model (HMM) in probabilistic reasoning.

(c) Write short notes on the following :

    (i)   Knowledge engineering in first-order logic

    (ii)   Forward and backward chaining.

4. Attempt any **two** parts of the following :   **(10×2=20)**

(a) Compare and contrast between supervised and unsupervised learning techniques.

(b) Illustrate Naïve Bayes model of statistical learning.

(c) Describe the decision tree learning model by choosing a suitable example.

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5. Write short notes on any **FOUR** of the following : **(5×4=20)**

   (a) Principles of pattern recognition system

   (b) Hidden Markov Models

   (c) Linear Discriminant Analysis

   (d) Learning with hidden variables

   (e) Knowledge in learning

   (f) Reinforcement learning.

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