

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

PAPER ID : 2875 Roll No.

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**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.

- (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.

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.