

(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. VII) ODD SEMESTER THEORY  
EXAMINATION 2013-14

**ARTIFICIAL INTELLIGENCE**

*Time : 3 Hours*

*Total Marks : 100*

**Note :- Attempt all questions.**

1. Attempt any four parts of the following : (5×4=20)
- (a) What do you mean by Artificial Intelligence ? How the artificial intelligence is different than general intelligence ?
  - (b) Define Turing test. Is Turing test is sufficient to define the operational definition of artificial intelligence.
  - (c) What is Intelligent Agent ? Describe basic kinds of agents program.
  - (d) Prepare a short note highlighting the landmark incidences that were responsible for the emergence of artificial intelligence as a new discipline.
  - (e) Define the problem domain of computer vision in the context of artificial intelligence.
  - (f) Describe the role of artificial intelligence in natural language processing.

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

- (a) Compare and contrast between uninformed search techniques and informed search techniques.
- (b) How a problem can be solved by searching ? Illustrate your answer using 8-queens problem.
- (c) Describe alpha-beta pruning with suitable examples.

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

- (a) Prove that the following sentence is valid :

“If prices fall then sell increases. If sell increases then John makes the whole money. But John doesn't make the whole money. Therefore, prices do not fall.”

- (b) Consider the argument,

“All dogs bark. Some animals are dogs. Therefore, some animals bark.”

Determine whether the conclusion is a valid consequence of the premises.

- (c) Define Hidden Markov Model (HMM). Illustrate how HMMs are used for speech recognition.

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

- (a) Illustrate decision trees learning technique using a suitable example.
- (b) What is clustering ? Describe k-mean clustering technique.
- (c) Describe a learning technique that is used to handle the problems of hidden variables.

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

- (a) Pattern Recognition
- (b) Principle Component Analysis (PCA)
- (c) Linear Discriminant Analysis (LDA)
- (d) Nearest Neighbour Rule
- (e) Support Vector Machine (SVM)
- (f) Reinforcement learning.