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

PAPER ID : 2875 Roll No.

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.