| Paper Code: ECS 801 | Roll No. | | | | | | | | | | |
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# B.Tech.
## (SEM VII) EVEN SEMESTER EXAMINATION 2015-16
## ARTIFICIAL INTELLIGENCE

**[Time: 3 hrs.]** **[Max. Marks: 100]**

**Note-** ***Attempt All Questions. All Questions carry equal marks*:-**

1. Attempt any FOUR parts of the following. [5x4=20]

   (a). Define the following terms in your words:
   (i) Intelligence (ii) Artificial Intelligence
   (b). Describe the state-of-the-art applications of artificial intelligence.
   (c). Explain goal-based agent programme in brief.
   (d).What is the role of artificial intelligence in NLP.
   (e). What do you understand by computer vision, Explain your answer with examples.
   (f). Describe the role of computer science in the emergence of artificial intelligence as a discipline.

2. Attempt any TWO parts of the following. [10x2=20]

   (a) How does the search algorithms judge? Compare any four uninformed search algorithms on those criterions.
   (b) Give the initial state, goal state, successor function and cost function for the problem to color a planar graph using four colors in such a way that no two adjacent regions have the same color.
   (c) Describe greedy best-fit search algorithm with an example.

3. Attempt any TWO parts of the following. [10x2=20]

   (a). How the quantifiers are related in the predicate logic theory. Explain your answer with the example of first-order predicates.
   (b). Describe hidden Markov model in detail.
   (c). Explain the basic principle of Bayesian learning with an example.

4. Attempt any TWO parts of the following. [10x2=20]

   (a). Describe principle component analysis method in detail.
   (b). What is clustering? Describe any one method in detail.
   (c). Explain in detail the following learning methods:
   (i) EM – algorithm (ii) Reinforcement learning

5. Write short notes on any FOUR of the following. [5x4=20]

(a). Statistical pattern recognition
(b). Decision trees
(c). Nearest-neabhour rule
(d). Fuzzy classification
(e). Turing test
(f). Autonomous control and planning