

**Q.1** A Define AI. Explain state of Art. [07]  
 B Explain Simple reflex, Model-based and Goal-based agent programs. [07]  
**OR**  
 A Explain different approaches of AI. [07]  
 B What is environment? Explain any four properties of environment. [07]

**Q.2** A Explain BFS and Depth-limited search techniques with example. [07]  
 B Explain problem solving approach for solving 8-puzzle problem. [07]  
**OR**  
 A What do you mean by informed search technique? Explain concept of Greedy BFS. [07]  
 B Explain concept of well-defined problem and solution. [07]

**Q.3** A Explain Page Rank algorithm with example. [07]  
 B What is information extraction? What do you mean by finite-state-automata? Explain it. [07]  
**OR**  
 A Explain data compression and text classification. [07]  
 B Define language. Explain n-gram character and word models. [07]

**Q.4** A Write a short note on area of machine learning. [07]  
 B Explain supervised machine learning in details. [07]  
**OR**  
 A Explain semi supervised and reinforcement learning in brief. [07]  
 B What is machine learning? Explain machine learning in big picture. [07]

**Q.5** **Attempt the following. (Any seven)** [14]

- What is meant by Artificial Intelligence?  
 a) It is defined as a field aiming to make humans more intelligent.  
 b) It is defined as a field aiming to improve security.  
 c) It is defined as a field aiming to mine the data.  
 d) It is defined as a field aiming to develop intelligent machines.
- The process of looking for a sequence of actions that reaches the goal is called \_\_\_\_\_  
 a) execution  
 b) solution  
 c) search  
 d) state
- \_\_\_\_\_ is the subset of documents that the IR system judges to be relevant to the query.  
 a) Corpus of documents  
 b) A result set  
 c) A presentation of the result set  
 d) Queries posed in a query language
- \_\_\_\_\_ is an unsupervised machine learning algorithm.  
 a) Support Vector Machines  
 b) Decision Trees  
 c) Neural Networks  
 d) K-means Clustering

v. \_\_\_\_\_ is an environment measure for an automated taxi driver type of agent.

- Roads
- Traffic
- Pedestrians
- All of the above

vi. A problem can be defined formally by which of the component(s)?

- Initial state, actions
- Transition model
- Goal test
- All of the above

vii. HITS stands for \_\_\_\_\_

- Hyperlink Indicated Topic Search
- Hyperlink Induced Topic Search
- Hypertext Indicated Topic Search
- Hypertext Induced Topic Search

viii. Machine learning is a subset of \_\_\_\_\_.

- Artificial Intelligence
- Deep Learning
- Neural Networks
- All of the above

ix. If an agent's sensors give it access to the complete state of the environment at each point in time, then we say that the task environment is \_\_\_\_\_

- fully observable.
- partially observable
- unobservable.
- None of the above

x. Which of the following is not a criteria to measure a performance of a search algorithm?

- Completeness
- Optimality
- Time complexity
- None of the above

xi. \_\_\_\_\_ is the process of acquiring knowledge by skimming a text and looking for occurrences of a particular class of object and for relationships among objects.

- Information searching
- Information generating
- Information retrieval
- Information extraction

xii. \_\_\_\_\_ type of learning doesn't have the previous knowledge of the class or value of any sample, it should infer it automatically.

- Supervised
- Semi supervised
- Unsupervised
- Reinforcement

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