

## BCA Sem.-6 (Rep) Examination

CC 309

Intro to AI &amp; ML

September-2024

Time : 2-30 Hours]

[Max. Marks : 70

- 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]  
 i. 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.  
 ii. The process of looking for a sequence of actions that reaches the goal is called \_\_\_\_  
 a) execution  
 b) solution  
 c) search  
 d) state  
 iii. \_\_\_\_ 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  
 iv. \_\_\_\_ 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.
  - a) Roads
  - b) Traffic
  - c) Pedestrians
  - d) All of the above
- vi. A problem can be defined formally by which of the component(s)?
  - a) Initial state, actions
  - b) Transition model
  - c) Goal test
  - d) All of the above
- vii. HITS stands for \_\_\_\_
  - a) Hyperlink Indicated Topic Search
  - b) Hyperlink Induced Topic Search
  - c) Hypertext Indicated Topic Search
  - d) Hypertext Induced Topic Search
- viii. Machine learning is a subset of \_\_\_\_\_.
  - a) Artificial Intelligence
  - b) Deep Learning
  - c) Neural Networks
  - d) 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 \_\_\_\_\_.
  - a) fully observable.
  - b) partially observable
  - c) unobservable.
  - d) None of the above
- x. Which of the following is not a criteria to measure a performance of a search algorithm?
  - a) Completeness
  - b) Optimality
  - c) Time complexity
  - d) 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.
  - a) Information searching
  - b) Information generating
  - c) Information retrieval
  - d) 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.
  - e) Supervised
  - f) Semi supervised
  - g) Unsupervised
  - h) Reinforcement

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