

Seat No. : _____

JC-102

July-2021

B.C.A., Sem.-VI

**CC-309 : Introduction to AI and ML
(New Course)**

Time : 2 Hours]

[Max. Marks : 50

- Instructions :** (1) All questions in **Section – I** carry equal marks.
(2) Attempt any **TWO** questions in **Section – I**.
(3) Question – **5** in **Section – II** is **COMPULSORY**.

Section – I

1. (A) What is AI ? Explain the four approaches in details. **10**
(B) Define agent. Explain Goal based agent and Utility based agent. **10**
2. (A) Explain problem-solving approach using toy problem. **10**
(B) Explain A* search technique with example. **10**
3. (A) Write a short note on : **10**
(1) N-gram character model
(2) N-gram word model
(B) What is the task of information retrieval ? Explain Page Rank and HITS algorithms. **10**
4. (A) What is machine learning ? Why the model works on new data ? **10**
(B) List out types of machine learning. Explain supervised and unsupervised learning. **10**

Section – II

5. Attempt any **five** MCQs : (Any 5×2 marks each) **10**
(1) What kind of environment is crossword puzzle ?
(A) Dynamic (B) Semi Dynamic
(C) Static (D) Episodic

- (2) The PEAS in the task environment is about _____.
- (A) Peer, Environment, Actuators, Sense
 - (B) Perceiving, Environment, Actuators, Sensors
 - (C) Performance, Environment, Actuators, Sensors
 - (D) Percept, Environment, Action, Study
- (3) What is the heuristic function of greedy best-first search ?
- (A) $f(n) \neq h(n)$
 - (B) $f(n) = h(n)$
 - (C) $f(n) = g(n) + h(n)$
 - (D) None of these
- (4) _____ is/are example/s of text classification.
- (A) Spelling correction
 - (B) Language Identification
 - (C) Genre classification
 - (D) Both (B) & (C)
- (5) The set of all leaf nodes available for expansion at any given point is called _____.
- (A) Frontier
 - (B) Parent node
 - (C) Corpus
 - (D) Root node
- (6) _____ combines the benefits of depth-first and breadth-first search.
- (A) Depth-limited search
 - (B) Iterative deepening search
 - (C) Bi-directional search
 - (D) None of these
- (7) Regular expression for matches a period followed by two digits, or nothing is _____.
- (A) $([.][0-9][0-9])^+$
 - (B) $([.][0-9][0-9])^+$
 - (C) $([.][0-9][0-9])\$$
 - (D) $([.][0-9][0-9])?$
- (8) SVM stands for
- (A) Super Vector Machine
 - (B) Support Vector Machine
 - (C) Static Vector Matrix
 - (D) Super Vector Matrix
- (9) For clustering, we do not require-
- (A) Labelled data
 - (B) Unlabelled data
 - (C) Numerical data
 - (D) Categorical data
- (10) From the sentence "Ai Online Course", how many bigrams can be created ?
- (A) 0
 - (B) 1
 - (C) 2
 - (D) 3