BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – Dip.CSE-2018/Dip.CSE-2019/Dip.CSE-2020
Course Name – Artificial Intelligence
Course Code - DCSE602
(Semester VI)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. *Choose the correct alternative from the following :*

(i) 'John is very intelligent' – relate the method by which this statement can be completely represented

    a) FOPL
    b) Default logic
    c) Fuzzy logic
    d) Propositional logic

(ii) Select the correct option which can be the proper meaning of the word 'Artificial'

    a) Natural
    b) Machine made
    c) Man made
    d) Automation made

(iii) Select the appropriate one that isn't a machine learning method

    a) Supervised
    b) Semi supervised
    c) Unsupervised
    d) Hill-climbing

(iv) Interpret the Key task of a problem-solving agent

    a) Solve the given problem and reach to goal
    b) To find out which sequence of action will get it to the goal state
    c) Both a and b
    d) None of these

(v) Predict about the type of environment if the number of unambiguous states is limited or finite:

    a) Discrete
    b) Continuous
    c) Static
    d) Dynamic

(vi) Associate the category of environment for a car self-driving agent

    a) Discrete
    b) Continuous
    c) Static
    d) Dynamic

(vii) Identify the test environment, where one real and another one artificial agents are simultaneously tested?

    a) Utility based Test environment
    b) Turing Test environment
    c) Model based Test environment
    d) None of these

(viii) Match the another name of blind search

    a) Informed search   b) Uninformed search
    c) Adversarial search   d) Random search

(ix) Indicate State space is composition of which one?

    a) Decision-making algorithm   b) Learning algorithm
    c) Both Decision-making & Learning algorithm   d) Complex algorithm

(x) Interpret that the statement "The room temperature is hot" here the 'hot' can be represented by

    a) Fuzzy set   b) Crisp set
    c) Both fuzzy and crisp set   d) None of these

(xi) Select which of the search technique is implemented by first-in- first-out queue

    a) Depth-first search   b) Breadth-first search
    c) Bidirectional search   d) None of the mentioned

(xii) Select which environment used by adversarial search problems

    a) Competitive Environment   b) Cooperative Environment
    c) Neither a nor b   d) All of these

(xiii) Enumerate The concept of 'Frames' is

    a) A way of representing knowledge   b) Data structure
    c) Data type   d) None of these

(xiv) Interpret The process of adjusting the weight factors in ANN as

    a) Activation   b) Synchronization
    c) Learning   d) None of these

(xv) Determine the type of Mathematical representation of space or simply space complexity for storing nodes in Breadth-First Search

    a) Exponential   b) Logarithmic
    c) Geometric progression   d) None of these

Group-B
(Short Answer Type Questions)   3 x 5=15

2. Justify the fundamental goal of Knowledge Representation   (3)
3. Explain why Turing test is performed?   (3)
4. Differentiate between weak AI and strong AI.   (3)
5. Discuss how the machine learning is related to AI?   (3)
6. Explain the problems in hill climbing search methods due to which they may fail to find the solution?   (3)

OR

Justify briefly that how machine learning is related to AI?   (3)

Group-C
(Long Answer Type Questions)   5 x 6=30

7. Differentiate between blind search and heuristic search with example.   (5)
8. Explain the advantage of bi-directional search over BFS and DFS with example.   (5)
9. Compare Supervised and Unsupervised Learning with graphical illustration.   (5)
10. Analyze linear and non linear planning.   (5)
11. Justify the statement with your own view: "The goal of AI is to enable the machine to think without any human intervention."   (5)
12. Explain the consequence between a node and its predecessors while creating Bayesian Network.   (5)

OR

Express Peg and Disc problem and solve it with the help of state space representation.   (5)