BRAINWARE UNIVERSITY

Term End Examination 2023
Programme – B.Tech.(ECE)-2019
Course Name – Artificial Intelligence and Machine Learning
Course Code - OEC701A
(Semester VII)

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) Beat First Search uses which data structure?
a) Stack b) Queue
c) Priority queue d) Linked list

(ii) Depth First Search Algorithm uses which data structure?
a) Stack b) Queue
c) Priority queue d) Linked list

(iii) 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

(iv) The agents select actions or task on the basis of priority, called_____.
a) Utility based agents b) Model based reflex agents
c) Goal based agents d) None of these

(v) The concept that hiding detail representation is known as _____.
a) Extraction b) Abstraction
c) Information Retrieval d) Data mining

(vi) Forward reasoning (Top-Down) approach is _____ .
a) Data driven b) Goal driven
c) Knowledge driven d) Resolution driven

(vii) New states are generated in genetic algorithm by
a) Composition b) Mutation
c) Cross over d) Both b and c

(viii) The concept of perceptron implemented by _____
a) Feed-forward neural network b) Back-propagation algorithm
c) Back-tracking algorithm d) Feed Forward-backward algorithm

(ix) search technique uses the stack operation.

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

(x) The search technique that continually moves in the direction of increasing value that is uphill

a) Up-Hill Search
b) Hill-Climbing
c) Reverse-Down- Hill search
d) None of the mentioned

(xi) Regression method is a example of

a) Semi-supervised learning models.
b) Reinforcement learning models
c) Supervised learning models.
d) unsupervised learning models.

(xii) Transforms the fuzzy value into the crisp value.

a) defuzzification Module
b) knowledge base
c) both of these
d) None of these

(xiii) Pattern recognition system is done by

a) Expert Systems
b) Natural Language Processing
c) Neural Networks
d) Robotics

(xiv) The composition for agents in artificial intelligence?

a) Program
b) Architecture
c) Both a & b
d) None of the mentioned

(xv) The Key task of a problem-solving agent is given by

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

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Using Diagram explain Agent Architecture. (3)
3. Explain the fundamental goal of Knowledge Representation. (3)
4. Explain DFS with iterative deepening in AI. (3)
5. Explain the aim of Turing test towards understanding intelligence? (3)
6. Explain A* Search with creating an example. (3)

OR

"AI is interdisciplinary in nature and its foundations are in various fields."Illustrate with valid reasons. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Write different situations to apply informed and uninformed search. (5)
8. Explain with the help of an example how inheritance is achieved in Semantic networks? (5)
9. What is Goal based Agent ? Create an example. (5)
10. Differentiate forward reasoning and backward reasoning with an example. (5)
11. Define the need of Artificial Intelligence with an example (5)
12. What is the difference between Machine Learning and Deep Learning? (5)

OR

Explain the assessment that is used to test the intelligence of a machine or it's behavior. (5)

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