BRAINWARE UNIVERSITY

Term End Examination 2022
Programme – MCA-2018/MCA-2019/MCA-2020/MCA-2021
Course Name – Artificial Intelligence
Course Code - MCA304/MCA302
(Semester III)

Time : 2:30 Hours

Full Marks : 60
[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) What will happen if the hypothesis space contains the true function?

     a) Realizable
     b) Unrealizable
     c) Both Realizable & Unrealizable
     d) None of these

(ii) Which is true for Decision theory?

     a) Decision Theory = Probability theory + utility theory
     b) Decision Theory = Inference theory + utility theory
     c) Decision Theory = Uncertainty + utility theory
     d) Decision Theory = Probability theory + preference

(iii) What are taken into account of state-space search?

     a) Postconditions
     b) Preconditions
     c) Effects
     d) Both Preconditions & Effects

(iv) How many ways are available to solve the state-space search?

     a) 1
     b) 2
     c) 3
     d) 4

(v) Which is not the commonly used programming language for AI?

     a) PROLOG
     b) Java
     c) LISP
     d) Perl

(vi) A problem in a search space is defined by which one of these states?

     a) Initial state
     b) Last state
     c) Intermediate state
     d) All of these

(vii) What is the main 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) All of these
     d) None of these

(viii) How many types of agents are there in artificial intelligence?

a) 1
b) 2
c) 3
d) 4

(ix) What is a heuristic function?

a) A function to solve mathematical problems

b) A function which takes parameters of type string and returns an integer value

c) A function whose return type is nothing

d) A function that maps from problem state descriptions to measures of desirability.

(x) _____ number of informed search method are there in Artificial Intelligence.

a) 4
b) 3
c) 2
d) 1

(xi) What is the other name of informed search strategy?

a) Simple search
b) Heuristic search
c) Online search
d) None of the mentioned

(xii) How many things are concerned in the design of a learning element?

a) 1
b) 2
c) 3
d) 4

(xiii) Which models is/are used in machine learning?

a) Decision tree
b) Neural network
c) Propositional and FOL rule
d) All of these

(xiv) What kind of perception is used in printing?

a) Optical character recognition
b) Speech recognition
c) Perception
d) None of these

(xv) Which of the following is not the promise of artificial neural network?

a) It can explain result
b) It can survive the failure of some nodes
c) It has inherent parallelism
d) It can handle noise

Group-B
(Short Answer Type Questions)

3 x 5=15

2. Observe neural net learning and genetic learning   (3)
3. Describe Strong AI, applied AI, and cognitive simulation   (3)
4. Differentiate between L1 & L2 regularization.   (3)
5. Calculate knowledge representation in AI.   (3)
6. Differentiate between Deterministic vs Stochastic.   (3)

OR

Compare between Fully observable & Partially Observable.   (3)

Group-C
(Long Answer Type Questions)

5 x 6=30

7. Define game theory? How is it important in AI?   (5)
8. Categorize the techniques of Knowledge Representation in AI   (5)
9. Analyze the Structure of an AI Agent & PEAS.   (5)
10. Concluder on Types of search algorithms.   (5)
11. Establish the problems in Hill Climbing Algorithm with solution.   (5)
12. Explain knowledge representation in AI.   (5)

OR

Explain NLP. What are the various components of NLP?   (5)

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