Seat No:_____   Enrollment No:_____

PARUL UNIVERSITY
FACULTY OF IT & COMPUTER SCIENCE
BCA/ B.Sc.(IT) / IMCA(AY_IV) Summer 2022-23 Examination

Semester:4   Date: 21/03/2023
Subject Code: 05101265/05102253/05302253   Time: 10.30am to 1.00pm
Subject Name: Artificial Intelligence – I   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1   Answer the followings.
  A.   Answer / Define the following in short.   (05)
1.   Define Machine Learning
2.   Define Linguistic Intelligence.
3   How AI can be used in E-Commerce.
4.   Define Game Playing
5.   What is Fact in Prolog?
  B.   Multiple choice type questions/ Give the sentence true or false. (Each of 01 marks)   (10)
1.   Which of the algorithm is related to Artificial Intelligence?
            A. Routing Algorithm
            B. Greedy Algorithm
            C. Hill Climbing Algorithm
            D. Recursive Algorithm
2.   Which of the following language is suitable for Artificial Intelligence?
            A. Fortran
            B. Basic
            C. Prolog
            D. 'C'
3   An agent can improve performance by
            A. Learning
            B. Responding
            C. Observing
            D. Perceiving
4.   Which of the following are heuristic search algorithms?
            A. Best First Search
            B. Hill climbing
            C. Both
            D. None
5.   Who is the father of artificial intelligence?
            A. John McCarthy
            B. Fisher Ada
            C. Allen Newell
            D. Alan Turning
6.   If a robot can alter its own trajectory in response to external conditions, it is considered to be:
            A. mobile
            B. open loop
            C. intelligent
            D. non-servo
7.   What is the name of the computer program that contains the distilled knowledge of an expert?
            A. Management information System
            B. Expert system
            C. Data base management system
            D. Artificial intelligence
8.   Knowledge engineering is a field of Artificial intelligence.
         True/False?
9.   A heuristic is a way of trying

A. To search and measure how far a node in a search tree seems to be from a goal

B. To discover something or an idea embedded in a program

C. To compare two nodes in a search tree to see if one is better than the other

D. All are correct

10. What are the main goals of AI?

A. Create Expert Systems

B. Implement Human Intelligence in Machines

C. Both Options

D. None of the above

Q.2 **Answer the followings. (3 Marks Questions.) (Any Five)** **(15)**

1. Explain Natural Language Processing.
2. Explain Simple Hill Climbing Algorithm
3. Define Global Maximum, Flat local maximum and Plateaus.
4. Explain Informed search algorithm. List types for the same.
5. What is Prolog? List applications of Prolog.
6. Explain any three applications of Artificial Intelligence.

Q.3 **Answer the following. (5 Marks Questions) (Any three)** **(15)**

1. Explain Algorithm steps for Means End Analysis Algorithm.

2. Write an algorithm of Best First Search with example.

3. Explain General and Strong AI.

4. What is Production System and Production Rule? Explain Classes of a Production System

Q.4 **Answer the following in detail.**

A. Explain Relational and Inheritable Knowledge with example. **(05)**

B.(1) What is Expert System? What is the reason one should develop and use Expert System? Justify. **(05)**

B.(2) What is AI? Write history of AI. **(05)**

OR

B.(1) Explain Predicate Logic. Write Difference of Predicate Logic Vs Propositional Logic **(05)**

B.(2) Explain rules and Cut in Prolog with syntax and example. **(05)**