[5640]- 5006

M.Sc. (Part - I) (Computer Science)
CSDT - 114 B : ARTIFICIAL INTELLIGENCE
(2019 Pattern) (Semester - I)

Time :2 Hours] *[Max. Marks : 35*

Instructions to the candidates :-
1) *Question 1 is compulsory.*
2) *Q. 2 to Q.5 Attempt any 3 questions.*
3) *Q.2 to Q.5 Carry equal marks.*

Q1) Attempt any <u>five</u> : **[5]**

a) Define Artificial Intelligence

b) BFS

c) Forward Chaining

d) Machine Learning

e) Find Output   a = 4.5

   b = 2

   Print a // b

f) Hill climbing.

Q2) Attempt the following questions. **[4 + 4 + 2 = 10]**

a) Explain generate and test Heuristic search technique. **[4]**

b) What is supervised learning? Discuss any one algorithm with example.**[4]**

c) Write a python program to calculate factorial of a given no. **[2]**

Q3) Attempt the following questions : **[4 + 4 + 2 = 10]**

a) Two jugs, A 5-gallon and 7 - gallon jug is given. Neither has any measuring mark on it unlimited supply of water is available. How do we measure exactly 1 gallon water in any one jug. Define the production rules. Given the solution. **[4]**

b) Write a short note on game playing. **[4]**

c) Define means - ends Analysis. **[2]**

P.T.O.

Q4) Attempt the following questions. **[4 + 4 + 2 = 10]**

    a)   Translate the following english statements into FOPL. **[4]**

        i)   All students are smart.

        ii)   Some students are smart.

        iii) Ram takes either computer or mobile

        iv) All students takes same course.

    b)   Write python syntax for following list methods. **[4]**

        i)   Add   ii)   Append

        iii) Extend   iv) Delete

    c)   What is alpha-beta cutoff. **[2]**

Q5) Attempt any two of the following **[5 + 5 = 10]**

    a)   Write a python program to implement DFS algorithm. **[5]**

    b)   Solve a cryptarithmetic problem EAT + THAT = APPLE No two letters have the same value. The sum of the digits must be as shown in the above problem. **[5]**

    c)   Write a short note on AO* Algorithm. **[5]**