Reg. No. | | | | | | | | | | | |

BCACACN 603

Sixth Semester B.C.A. Degree Examination, June/July 2025
(NEP – 2020) (2023 – 24 Batch Onwards)
ARTIFICIAL INTELLIGENCE AND APPLICATIONS

Time : 2 Hours Max. Marks : 60

***Note** : Answer **any six** questions from Part – **A** and **one full** question from **each** Unit of Part – **B**.*

PART – A

(6×2=12)

1. a) Define rational agent.

   b) What are fully observable and partially observable environments ? Give an example.

   c) What is a toy problem ? Give an example.

   d) What are informed search strategies ? Give an example.

   e) What is tautology ? Give an example.

   f) What is diagnostic rule in FOL ? Give example.

   g) Define Learning.

   h) Expand NLP and SVM.

M.S. OF BUSINESS MANAGEMENT LIBRARY

PART – B

Unit – I

2. a) Write a note on "Acting humanly, the Turing test approach". **(4+4+4)**

   b) How do you specify a task environment using PEAS description ? Explain with an example.

   c) Explain model based reflex agent with a neat diagram.

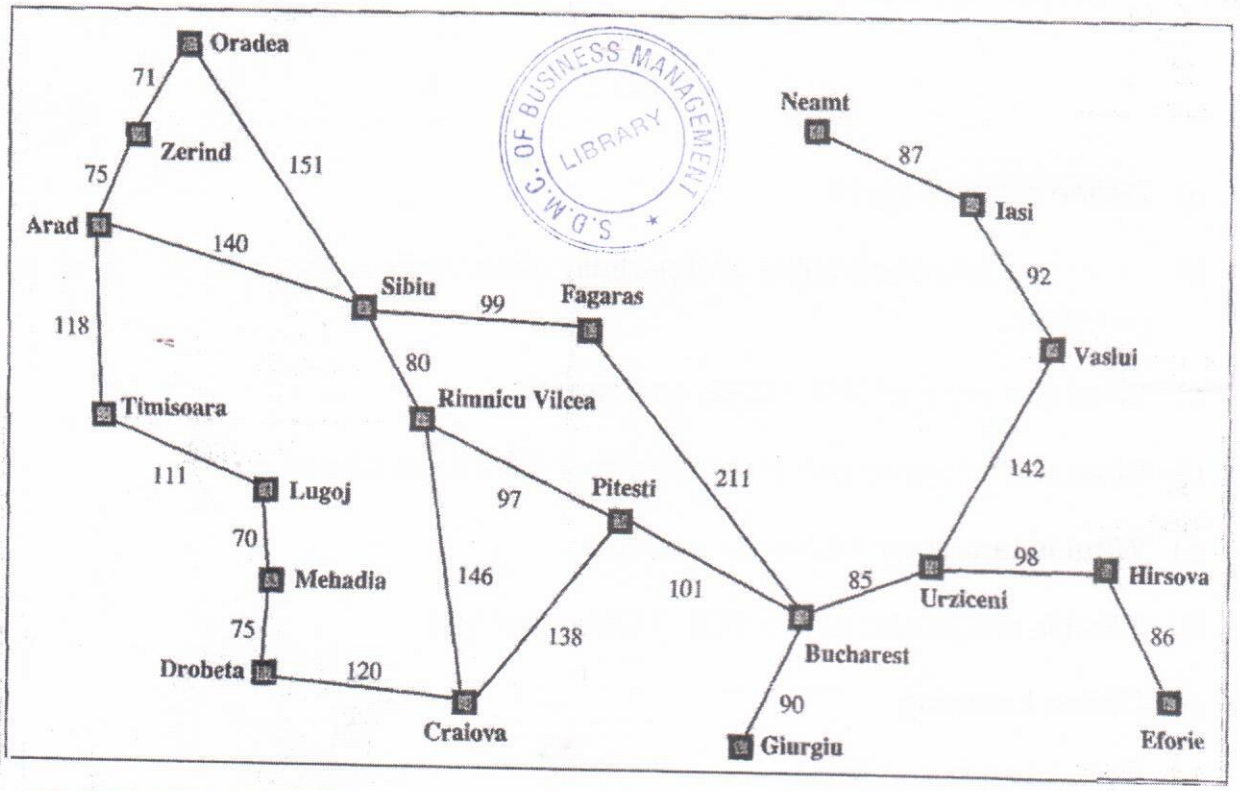
P.T.O.

3. a) Briefly explain any four foundations of AI. **(6+6)**
   b) Explain any six state of the art AI Applications.

Unit – II

4. a) Write tree search algorithm and explain. **(4+4+4)**
   b) Explain Breadth First Search algorithm with an example.
   c) Write a note on well-defined problems and solutions.

5. a) Explain Greedy Best First Search. Consider the map of Romania and the h_{SLD} value table given below. Use greedy best-first search to find a path from Arad to Bucharest. **(6+6)**



S.D.M.C. OF BUSINESS MANAGEMENT LIBRARY

Arad	366	Mehadia	241
Bucharest	0	Neamt	234
Craiova	160	Oradea	380
Drobeta	242	Pitesti	100
Eforie	161	Rimnicu Vilcea	193
Fagaras	176	Sibiu	253
Giurgiu	77	Timisoara	329
Hirsova	151	Urziceni	80
Iasi	226	Vaslui	199
Lugoj	244	Zerind	374

   b) Explain any two real world problems.

Unit – III

6. a) Explain two standard quantifiers in FOL with example. **(4+4+4)**
   b) Explain Forward-chaining and Backward chaining in propositional logic.
   c) Write a note on Unification and Lifting.

7. a) Explain Wumpus world game with diagram and agent program of it. **(6+6)**
   b) List and explain the steps of knowledge engineering process in FOL.

Unit – IV

8. a) Briefly explain Decision Trees in Machine Learning. **(4+4+4)**
   b) Write a note on Artificial Neural Network.
   c) Explain the elements of Image Processing.

9. a) List and explain the different forms of Machine Learning. **(6+6)**
   b) Explain the phases of NLP.

S.D.M.C. OF BUSINESS MANAGEMENT LIBRARY