Graphic Era
HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

Mid Term (Odd) Semester Examination October 2024

Roll no...........................

Name of the Course and semester: B.Tech CSE 7 Semester
Name of the Paper: Artificial Intelligence
Paper Code: TCS-706

Time: 1.5 hour   Maximum Marks: 50

Note:
- *(i)* Answer all the questions by choosing any one of the sub questions
- *(ii)* Each question carries 10 marks.
- *(iii)* Please specify COs against each question.

Q1.   (10 Marks)
a. What is Parsing? Define top down and bottom to top parsing by a search problem. (CO2)
                          OR
b. Discuss the difference between Context free Grammar and Transformational Grammar with the help of an example. (CO2)

Q2.   (10 Marks)
a. Explain the Mini-Max Algorithm with a suitable example. (CO1)
                          OR
b. What is A* searching, what is the concept of underestimation & overestimation in A* searching. Explain with the help of an example. (CO1)

Q3.   (10 Marks)
a. What is alpha-beta pruning? Why it is required. Explain with a suitable example. (CO1)
                          OR
b. Compare heuristic algorithm and solution guaranteed algorithms. Support your answer with suitable example. (CO1)

Q4.   (10 Marks)
a. Write short notes on the following: (CO2)
    (i)   Fillmore's Grammar
    (ii)   Sentence Generation
                          OR
b. Explain the concept of shanks Conceptual dependency with the help of an example. (CO2)

Q5.   (10 Marks)
a. What is Artificial Intelligence? What are the application areas of AI? What are intelligent agents in AI. (CO1)
                          OR
b. Write down the sequence of states (NOT the fringe) considered by DFS and BFS in the following directed graph, starting from state S, and assuming alphabetical ordering of states (i.e., when there is an arbitrary choice of which success state to expand, pick the one that is first in the alphabet) and that the search stops once the algorithm reaches the goal state G. (CO1)