

Zagdu Singh Charitable "Trust's (Regd.)

THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY

Autonomous College Affiliated to University of Mumbai Approved by All India Council for Technical Education(AICTE) and Government of Maharashtra(GoM)

Conferred Autonomous Status by University Grants Commission (UGC) for 10 years w.e.f. A.Y 2019-20 Amongst Top 200 Colleges in the Country, Ranked 193^d in NIRF India Ranking 2019 in Engineering College category

- ISO 9001:2015 Certified Programmes Accredited by National Board of Accreditation (NBA), New Delhi
- Institute Accredited by National Assessment and Accreditation Council (NAAC), Bangalore

In Semester Examination-1, March 2022 Basics of Artificial Intelligence

YEAR/SEM: ST/ SEM IV DATE: 22/3/2022

BRANCH: AIML TIME: 10:00 AM to 11:00AM

MARKS: 10

Subjective Questions

Instructions:

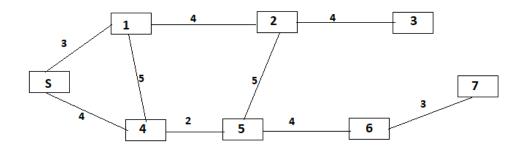
- 1. All questions are compulsory.
- 2. Assume suitable data wherever necessary and state the assumptions made.
- 3. Figures to the right indicate full marks.

Subjective Type Question (10 Marks)

Q2 Solve any 1 (5 Marks)

MARKS 5

Q2.a Consider the graph given below. Assume that the initial state is S and the goal state is 7. Find a path from the initial state to the goal state using A* Search. Also report the Solution Cost. The straight line distance heuristic estimates for the nodes are as follows: h(1)=14, h(2)=10, h(3)=8, h(4)=12, h(5)=10, h(6)=10, h(S)=15



Q2.b Discuss all Inference Rules in Propositional Logic and Solve the following problem using appropriate inference rules

Problem 1:

Premises:

S: He is Clever Student

S → P: If He is Clever Student, He is Good Programmer

 $(P \land S) \rightarrow C$: If He is Good Programmer & Clever Student, He get Placement in Google

Prove that, He get placement in Google

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- Q3.a List all informed search strategies. Explain Greedy Best First Search strategy and Compare it with Best First and A* Search w.r.t Algorithmic Properties
- Q3.b Explore the Wumpus World Problem by assuming suitable static representation in detail to find gold from right square