BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - V COMPUTER SCIENCE & ENGINEERING : SUMMER : 2024
SUBJECT: ITC-III: ARTIFICIAL INTELLIGENCE

Day : Thursday
Date : 16/05/2024

S-25592-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

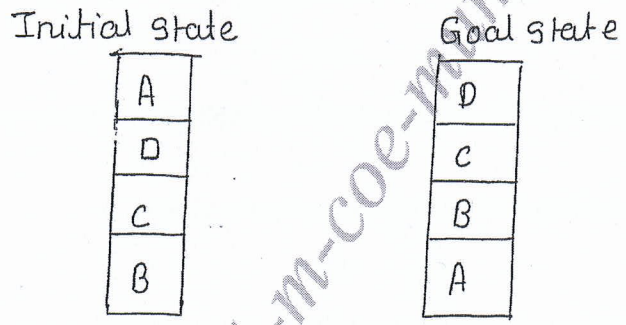
1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Draw well labelled diagrams **WHEREVER** necessary.

Q.1 Define Artificial Intelligence. Discuss the Tic-Tac-Toe problem in detail and explain how it can be solved using AI techniques. **(10)**

OR

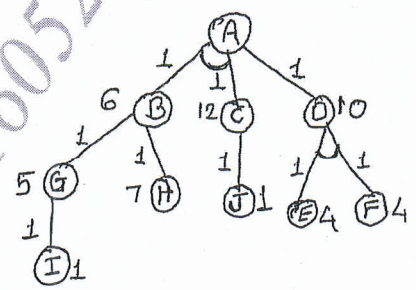
Define Agent? Explain types of agents with suitable example.

Q.2 Discuss the concept of Hill climbing search algorithm. Solve below example using Hill climbing Algorithm. **(10)**



OR

Define concept of AO* Algorithm. Explain it with the help of below example.



Q.3 Define constrain satisfaction problem List constraints of cryptarithmatic addition and solve below example using cryptarithmatic addition. **(10)**

1) SOME + TIME = SPENT

2) CROSS + ROADS = DANGER

P.T.O.

OR

Explain Mini-Man algorithm with example in Artificial Intelligence.

Q.4 Describe the concept of CNF. Write various rules to convert FOL into CNF with suitable example. **(10)**

OR

Describe the concept of forward chaining. Also solve below example using forward chaining.

Facts:- A, B

Rules:- $L \wedge M \rightarrow P$

$B \wedge L \rightarrow M$

$A \wedge P \rightarrow L$

$A \wedge B \rightarrow L$

$P \rightarrow Q$

Prove: Q.

Q.5 Use DST to find out the measure of belief m3. Given that m_1 = {abbot, babbot} = 0.8, $\theta = 0.2$, m_2 = {abbot, cabbot) = 0.7, $\theta = 0.3$. **(10)**

OR

Define Fuzzy logic? Also draw and explain Architecture of Fuzzy system.

Q.6 Explain in detail structure of Rule- Based expert system. **(10)**

OR

Explain Architecture of Expert system? Give its 3 application areas.

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