BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - VI COMPUTER SCIENCE & BUSINESS SYSTEM : WINTER : 2024

SUBJECT: ITC-IV: ARTIFICIAL INTELLIGENCE

Day : Wednesday
Date : 27/11/2024

W-24183-2024

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 What is AI and what reapplications of AI **(10)**

OR

Q.1 Explain in detail goal-based agents and utility-based agents. **(10)**

Q.2 List Informed Search Techniques. Explain the Concept of A* algorithm with suitable example? **(10)**

OR

Q.2 Describe the problems of hill climbing algorithm? Solve below example using hill climbing algorithm. **(10)**

Init state		*Goal state*
A		*D*
D		*C*
C	→	*B*
B		*A*

Q.3 Solve below Crypt arithmetic problem Using CSP. **(10)**

SEND	YOUR
+ MORE	+ YOU
MONEY	HEART

OR

Q.3 What are the optimal strategies in adversarial search? **(10)**

Q.4 Explain First Order Logic in AI. **(10)**

OR

Q.4 Explain Knowledge representation in AI. **(10)**

Q.5 Write down logical representations for the following sentences. **(10)**

a) Horses, cows and pigs are mammals.
b) An offspring of a horse.
c) Bluebeard is a horse.
d) Bluebeard is Charlie's parent.
e) Offspring and parent are inverse relations.
f) Every mammal has a parent.

OR

Q.5 Explain Dempster-Shafer theory. **(10)**

Q.6 What are expert systems? Give the components of expert systems. **(10)**

OR

Q.6 What is an Expert System? Explain in detail Components of Expert System. **(10)**

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