Reg. No.:

Name :

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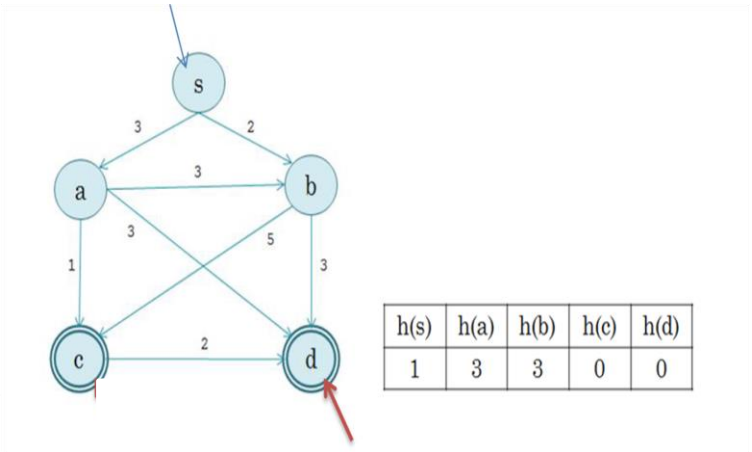
Mid-term Examinations, October 2021

Programme	:	**B.Tech – CSE**	Semester	:	**Fall 2021-2022**
Course	:	**Fundamentals in AI & ML**	Code	:	**CSA2001**
Faculty	:	**Dr. Durga Prasad Bavirisetti**	Slot/Class No.	:	**B11+B12+B13/0046**
Time	:	**1½ hours**	Max. Marks	:	**50**

Answer all the Questions

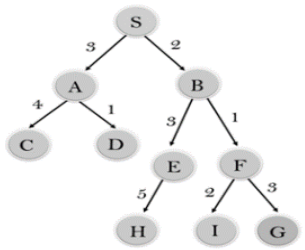
Q. No.	Question Description	Marks
1	Compare and analyse various intelligent agents.	**10**
2	Examine the propositional logic on following statements. a) $P \rightarrow Q \equiv \neg Q \rightarrow \neg$ P and vice versa.	**4**
	b) $\neg (P \wedge Q) \equiv (\neg P) \vee (\neg Q)$ and $\neg (P \vee Q) \equiv (\neg P) \wedge (\neg Q)$.	**6**
3	Find the shortest path of the following graph using A* algorithm.	**10**



h(s)	h(a)	h(b)	h(c)	h(d)
1	3	3	0	0

Note: *s* and *d* are source and goal nodes respectively.

4 Solve the following graph using Heuristic BFS and Hill climbing algorithms. **10**



node	H (n)
A	12
B	4
C	7
D	3
E	8
F	2
H	4
I	9
S	13
G	0

- Note: S and G are start and Goal nodes respectively. Table indicates the heuristic values.

5 Unify the following statements. **10**

a) UNIFY{p(b, X, f(g(Z))) and p(Z, f(Y), f(Y))}

a) UNIFY{p(f(a), g(Y)) and p(X, X)}

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