Reg. No.:

Name :

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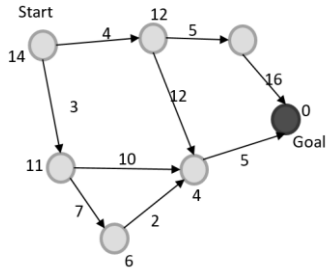
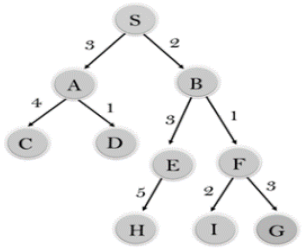
Mid-term Examinations, April 2021

Programme	:	**B.Tech – CSE Specialization in AI and ML**	Semester	:	**Winter 2020-2021**
Course	:	**Fundamentals in AI & ML**	Code	:	**CSA2001**
Faculty	:	**Dr. Durga Prasad Bavirisetti**	Slot/Class No.	:	**E11+E12+E13/0543**
Time	:	**1½ hours**	Max. Marks	:	**50**

Answer all the Questions

Q. No.	Question Description	Marks
1	Define an intelligent agent. Compare and analyse any four intelligent agents.	**10**
2	Examine the propositional logic on the 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.  Heuristic values: S → G = 14 E → G = 4 B → G = 12 F → G = 11 C → G = 11 G → G = 0 D → G = 6	**10**
4	Solve the following graph using Heuristic BFS and Hill climbing algorithms.  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.	**10**

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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