

328847(28)

B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(ET&T Branch)

ARTIFICIAL INTELLIGENCE & EXPERT SYSTEM

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) is compulsory from each unit and solve any two out of (b), (c) and (d).

Unit-I

1. (a) What is control strategies? How it is useful in searching?

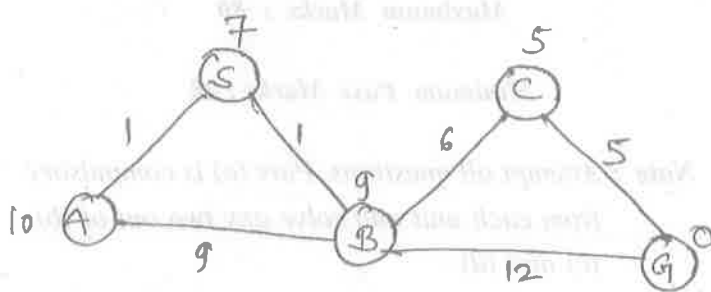
2

[2]

- (b) What is state space search? Solve water-jug problem using state space search. 7
- (c) What is blind search? Explain BFS and DFS with suitable algorithm and examples. 7
- (d) Explain the term forward chaining and backward chaining with example. 7

Unit-II

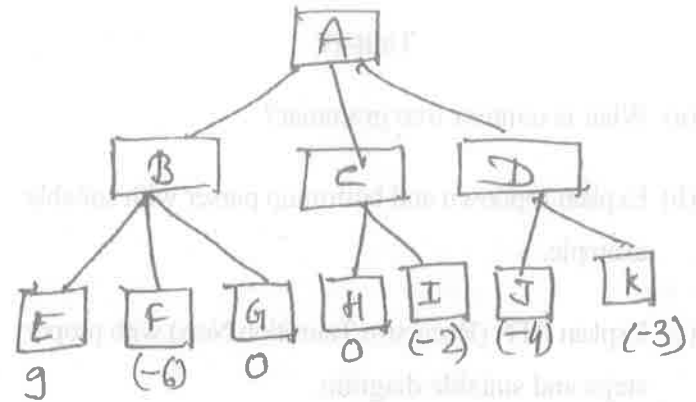
2. (a) Define the term Hemistic search. 2
- (b) Perform the A* algorithm on the following figure. Explicitly write down the queue at each step. 7



- (c) What is Hill climbing algorithm problem? Explain the problem/drawbacks which are associated with Hill climbing. 7

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- (d) Explain the Min Max search algorithm with using following diagram. 7



Unit-III

3. (a) What is well formed formula? 2
- (b) Translate the following sentences into predicate logic : 2
- (i) Every house is a physical object. 2
 - (ii) Some physical objects are houses. 2
 - (iii) Every house has an owner. 1
 - (iv) Everybody owns a house. 1
 - (v) Sue owns a house. 1
- (c) Write short notes on semantic networks. 7

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- (d) Explain resolution principle and unification with proper examples. 7

Unit-IV

4. (a) What is context free grammar? 2
- (b) Explain topdown and bottomup parser with suitable example. 7
- (c) Explain RTN (Recursive Transition Nets) with proper steps and suitable diagram. 7
- (d) Explain block word problem with suitable example. 7

Unit-V

5. (a) What is an Expert System? 2
- (b) Explain in detail an expert system architecture. 7
- (c) What is the need of MYCIN? Explain in detail. 7
- (d) Explain various types of learning. 7