



## AUTUMN MID SEMESTER EXAMINATION-2019

7<sup>th</sup> Semester B.Tech (Open Elective)

### ARTIFICIAL INTELLIGENCE

CS3208

Time: 1.5 HOURS

Full Marks: 20

**Attempt any FOUR questions including Question Number 1 which is compulsory.**

all parts of a question should be answered at one place only.

#### SECTION-A

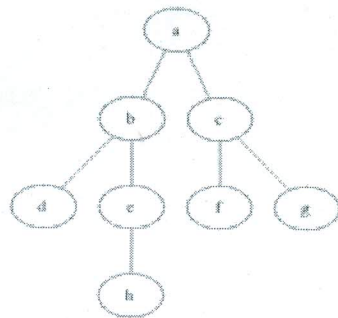
1. [1 × 5]
- (a) Define Artificial Intelligence and its application.
  - (b) Provide an example of simple reflex agent.
  - (c) Provide two examples of heuristic search algorithm.
  - (d) Mention three characteristics of an Artificial Intelligence system.
  - (e) Provide a heuristic function for n-queen problem.

#### SECTION-B

2. (a) Elaborate the essential requirements for defining a state space problem. [3]
- (b) Discuss the water-jug problem with respect to state space problem. [2]
3. (a) Differentiate between blind search and heuristic search. [3]
- (b) Explain the disadvantage associated with heuristic search algorithms. [2]

#### SECTION-C

4. (a) Explain briefly how hill climbing searches for the goal state in state space searching. [3]
- (b) Write the algorithm for depth first search (DFS) and solve the following graph using DFS search technique. [2]



5. (a) Elaborate the objective behind conducting Turing Test. [3]  
Provide the various components involved in Turing Test.
- (b) Briefly discuss the concept of backtracking and [2]  
constraint propagation with respect to Constraint Satisfaction problem.