H Roll No. ....

TCS/TIT–801

B. TECH. (CS/IT)
(EIGHTH SEMESTER)
MID SEMESTER EXAMINATION, 2018
ARTIFICIAL INTELLIGENCE

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) This question paper contains two Sections.

(ii) Both Sections are compulsory.

Section—A

1. Fill in the blanks/True-False :   (1×5=5 Marks)

   (a) Artificial Intelligence is the study and design of intelligent agent.   (True/False)

   (b) Deep Blue is a system for speech recognition.   (True/False)

   (c) In .... environment, the next state is completely determined by the current state and the action executed by the agent.

   (d) Chess is ...., ... environment.

   (e) .... is the process of deciding what actions and states to consider, given a goal.

2. Attempt any *five* parts :   (3×5=15 Marks)
   (a) What is agent ?
   (b) What is game playing ?
   (c) What is context free grammar ?
   (d) Define water jug problem.
   (e) Define intelligent behaviour.
   (f) Define rationality.

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c).   (5×2=10 Marks)
   (a) What is Artificial Intelligence ? Briefly explain history of AI.
   (b) What is task environment ? Explain with example various kind of environments.
   (c) Write short notes on the following :
       (i) Goal based agents
       (ii) Utility based agents

4. Attempt any *two* parts of choice from (a), (b) and (c).   (5×2=10 Marks)
   (a) Explain uniform cost search algorithm with example.
   (b) Explain depth limited search algorithm with example.
   (c) Differentiate between Uninformed search and Informed search techniques.

5. Attempt any *two* parts of choice from (a), (b) and (c).   (5×2=10 Marks)
   (a) Explain A* search algorithm with suitable example.
   (b) Explain min-max algorithm used for problem solving in games.
   (c) Write short notes on the following :
       (i) Hill climbing algorithm
       (ii) Problem formulation for TIC-TAC-TOE