2017

Time : 3 hours

Full Marks : 80

Candidates are required to give their answers in their own words as far as practicable.

The questions are of equal value.

Answer any **five** *questions out of which Q. No. 1 is compulsory.*

1. (a) Which search strategy is simulated by A* search algorithm if we take h(n) = 0 and one assumes no further restrictions on the cost function g ?

   (i) Depth first

   (ii) Breadth first

   (iii) Uniform cost

   (iv) None of these

   (b) Tuning test was done for

   (i) Check and correct the weight of NN

(Turn over)

(ii) Check and correct entry of knowledge base

(iii) Check whether a computer can achieve the behaviour like a human being

(iv) To check the correct answer of water jag problem

(c) _____ system uses forward reasoning.

(i) AI

(ii) A problem solving

(iii) Vision

(iv) Game playing

(d) A problem space consists of _____.

(i) States

(ii) Operation

(iii) Both (i) and (ii)

(iv) None of these

(e) Uniformed search is also called :

(i) Hill climbing

(ii) Best first search

Contd.

(iii) Worst case search

(iv) Brute force search

(f) A formal grammar recursively defines the expressions and _____ of the language.

(i) Wffs

(ii) Pffs

(iii) Dffs

(iv) None of these

(g) _____ allows qualification over finite subsets.

(i) Predicate logic

(ii) Formal logic

(iii) Weak second order logic

(iv) None of these

(h) The formula is in conjunctive normal form if it is a conjunction of clauses, where a clause is a _____ of literal.

(i) Conjunction

(ii) Disjunction

(iii) Valid

(iv) Negative

2. What is an agent ? Explain the structure of an agent. Solve a problem of your choice using agents.

3. What is heuristic function ? What are the characteristics of a good heuristic ? Discuss with suitable example.

4. Differentiate between informed and uninformed search. Explain Best first search with suitable example.

5. Solve the Cryptarithematic problem :

SEND

+ MORE

MONEY

6. Discuss Max-Min algorithm with example and discuss the significance of α, β pruning.

7. Assume the following facts :

- Ram only likes easy courses.
- Engineering courses are hard.
- All the courses in BCA dept are easy.
- BCA 603 is a AI course.

Use resolution to answer, 'What course would Ram like" ?

8. State the cases where you like the forward chaining and backward chaining. What is semantic network ?

9. Write short notes on the following :

(a) Knowledge representation

(b) Planning with state search

(c) Uncertain knowledge reasoning