

2019

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 five questions in which

Q. No. 1 is compulsory.

1. Choose the correct alternative of the following :

- (a) What is the name of the computer program
that simulates the thought processes of
human beings ?
- (i) Human logic
(ii) Expert system
(iii) Expert reason
(iv) Personal Informations

(Turn over)

- (b) A computer program that contains expertise in a particular domain is called an :
- (i) Intelligent planner
 - (ii) Automatic processor
 - (iii) Expert system
 - (iv) Operational symboliser
- (c) An AI technique that allows computers to understand associations and relationship between objects and events is called :
- (i) Heuristic processing
 - (ii) Cognitive science
 - (iii) Relative sybolism
 - (iv) None of these
- (d) In which of the following agent does the problem generator is present ?
- (i) Learning agent
 - (ii) Observing agent
 - (iii) Reflen agent
 - (iv) None of these

(e) The face recognition system is based on :

- (i) Strong artificial intelligence approach
- (ii) Weak artificial intelligence approach
- (iii) Cognitive artificial intelligence approach
- (iv) Applied artificial intelligence approach

(f) If a robot can alter its own trajectory in response to external conditions, it is considered to be :

- (i) Intelligent
- (ii) Mobile
- (iii) Open loop
- (iv) None of these

(g) Which is not a goal based agent ?

- (i) Inference
- (ii) Search
- (iii) Planning
- (iv) Conclusion

- (h) External action of the agent is selected by :
- (i) Perceive
 - (ii) Performance
 - (iii) Learning
 - (iv) Actuator
2. Which component determine rules of an AI Program ? What are the system that provide assistance in decision making through inference ?
3. Explain Alpha-Beta pruning and Alpha-Beta algorithm.
4. Define Expert System. Explain the architecture of an expert system in detail with a neat diagram and an example.
5. State the advantages of BFS. Differentiate Forward and Backward reasoning. Define Fuzzy reasoning.

6. Describe speech recognition in terms of language model and acoustic model.
7. Compare the A* algorithm with simulated Annealing and BFS techniques.
8. Explain propositional logic approach of knowledge representation in AI ? What are the advantages and disadvantages of predicate logic ?
9. Write short notes on any two the following :
- (a) Bayer's rule equation
 - (b) Uniform search technique
 - (c) Knowledge based system
 - (d) DFS