(Time: 3 Hours)   Total Marks: 80

(1) Ques 1. is compulsory.

(2) Attempt any 3 of the remaining 5 questions.

Q1 (a) What is AI? List down all components of AI.   (04)

  (b) Explain the limitations of Propositional logic with suitable example.   (04)

  (c) Describe the Bayes theorem.   (04)

  (d) Explain any AI problem with suitable example.   (04)

  (e) Solve the given crypt arithmetic puzzle: (04)

BASE

+ BALL

GAMES

Q2. a) Explain Hill Climbing and Simulated Annealing with suitable example.   (10)

  b) Explain Goal Based and Utility based agent with block diagram.   (10)

Q3. a) What is Prolog? What do you mean by Structure in Prolog?   (10)
    Write a Prolog Program for family information systems.

  b) What is heuristic function? Explain 8 puzzle problem.   (10)
    Explain the PEAS descriptor of Wumpus world problem.

Q4. a) Consider the following sentence   (10)

    (i) Mammals drink water.

    (ii) Man is Mortal.

    (iii) Man is Mammal.

    (iv) Bob is Man.

Prove *Bob is Mortal* using modus ponen & Resolution.

  b) Differentiate between Informed and Uninformed search techniques. Also explain
    A* algorithm with suitable example.   (10)

Q5. a) Explain Planning in AI. Compare and contrast between Partial Order Planning and Conditional Planning. Also explain the real time application of hierarchical planning. (10)

 b) What is uncertainty ? Explain Bayesian Network with example. (10)

Q6. Attempt any 4 :

a) Backward chaining with an example. (05)

b) Expert Shell system architecture. (05)

c) Conditional Probability. (05)

d) Knowledge base agent. (05)

e) Depth limited search. (05)

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