December 2023
BCA- VI SEMESTER
Artificial Intelligence (BCA-17-308)

Time: 3 Hours   Max. Marks:75

Instructions: 1. *It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.*

2. *Answer any four questions from Part -B in detail.*

3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART -A

Q1 (a) What is the difference between Weak AI and Strong AI?   (1.5)

(b) Explain Turing Test In AI?   (1.5)

(c) What do you mean by Problem reduction in AI?   (1.5)

(d) List the advantages and disadvantages of Best first search algorithm?   (1.5)

(e) Explain mapping between facts and representations using suitable diagram. (1.5)

(f) Define Expert System Shell   (1.5)

(g) What is semantic processing in NLP?   (1.5)

(h) Define Induction Learning?   (1.5)

(i) What are various issues arises while designing any search problem   (1.5)

(j) Write various applications of AI.   (1.5)

PART -B

Q2 (a) What is Hill Climbing? Explain Hill Climbing problems? Also explain solution of (10)
each of the problem in detail.

(b) What are different tasks domains of AI?   (5)

Q3 (a) Which search algorithm will use a limited amount of memory in online search? (5)
Compare uninformed and heuristic search algorithms in terms of memory and
complexity.

(b) What is NLP? Also explain Discourse and Pragmatic Processing?   (10)

Q4   What is an Expert System? What are its characteristics? Explain each and every (15)
component with the help of architecture.? Also write any two advantages of
expert system.

Q5 (a) What is problem state space? Solve water jug problem.   (5)

(b) What is learning in AI? How a computer learn? Explain Rote Learning and (10)
Explanation based learning in detail.

Q6 (a) What is predicate logic? How simple facts and instances can be represented in (10)

(b) Represent the following statement in FOPL   (5)
    (i) Anyone who kills an animal is loved by no_one
    (ii)All people who are graduating are happy

Q7   Write short note on the following   (15)
    (a) Constraint Satisfaction Problem
    (b) Issues in knowledge representation
    (c) Generate and Test heuristic search technique

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