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PGIVS-N 1548 A-2K13

M.Sc. IVth Semester (CBCS) Degree Examination

Computer Science

(Artificial Intelligence)

Paper - SCT 4.1

(New)

Time : 3 Hours Maximum Marks : 80

Instructions to candidates:

i) Section A is **compulsory**.

ii) Answer any **five** questions from section B.

Section - A

1. Answer the following: **(2×10=20)**

a) Define procedural knowledge

b) List the basic components of a knowledge based system

c) How facts are represented in prolog? Give an example.

d) Show that $P \vee \sim P$ is valid.

e) What is the significance of semantic nets?

f) Define a script structure.

g) Distinguish between blind and intermed search

h) List the measures of matching

i) Define ehomsky type 1 grammar

j) What are expert systems?

Section - B

2. a) Explain the importance of AI in problem solving

   b) Briefly describe knowledge representation schemes. **(6+6)**

3. a) Discuss the significance of cut and fail predicates in prolog.

   b) Write a prolog program that answers questions about family members and relationships. **(6+6)**

4. Envision a room containing a monkey, a chair, and some bananas that have been hung from the center of the ceiling, out of reach from the monkey. If the monkey is clever enough, he can reach the bananas by placing the chair directing below them and climbing on the top of the chair. Use FOPL to represent this monkey-banana World and, using resolution, prove that the monkey can reach the bananas. **(12)**

5. a) Discuss the structure of semantic pets with an example

   b) What are frames? Explain how they are different from scripts. **(6+6)**

6. a) What is Heuristic search? Explain best-first-search strategy.

   b) Describe the structures used in matching with examples **(6+6)**

7. a) Explain parsing techniques in NLP.

   b) Describe rule-based system architecture. **(6+6)**

8. Write short notes on any **two** of the following: **(6+6)**

   a) Traveling-salesman problem

   b) Characteristic features of expert systems

   c) DFS versus BFS

   d) MYCIN
