Roll No. ....

Total No. of Questions : 13]   [Total No. of Pages : 02

Paper ID [A0225]

(Please fill this Paper ID in OMR Sheet)

BCA (601) (Old/S05) (Sem. - 6th)
ARTIFICIAL INTELLIGENCE

Time : 03 Hours   Maximum Marks : 75

Instruction to Candidates:

1) Section -A is **Compulsory**.

2) Attempt any **Nine** questions from Section - B.

Section - A

(15 × 2 = 30)

Q1)

a) What is state space representation in problem solving?

b) Define Breadth first search algorithm.

c) List the advantages disadvantages of Depth first search algorithm?

d) What is problem decomposition?

e) List the drawback of a heuristic search technique.

f) Define Inheritable knowledge.

g) Explain mapping between facts and representations using suitable diagram.

h) What is inferential adequacy?

i) What is Isa hierarchy of attributes?

j) Define frame axioms.

k) List the advantages of strong slot and filler structures.

l) Explain top down parsing.

m) Define conversational postulates.

n) Explain intersectional search in semantic nets.

o) What is inferential distance?

Section - B

(9 × 5 = 45)

Q2) Explain the four categories of a production system.

Q3) Explain the water jug problem and its solution using production rules.

Q4) Briefly list the issues involved in design of general-purpose search technique.

Q5) What the steps involved in providing formal description to a problem.

Q6) Convert the following well formed formula to cluse form
$\neg$ Roman(x) V $\neg$ know(x, Marcus) V hate(x, Caesar) V $\neg$ hate(y, z) V thinkcrazy(x, y).

Q7) Explain Propositional resolution algorithm.

Q8) How can we speed up the resolution process?

Q9) What are the qualities of a good knowledge representation system?

Q10) Explain the Morphological, Syntactic & Semantic phase of natural language processing.

Q11) Explain Script using a suitable example.

Q12) Represent the following fact using partitioned semantic net
Every dog has bitten a mail carrier.

Q13) How will you represent the following knowledge using conceptual dependency assuming the primitive action INGEST is available.
John ate ice cream with a spoon.

✪ ✪ ✪ ✪