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

Paper ID [A0225]

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BCA (601) (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) Define production system.

b) Explain branch & bound search.

c) What is local and global motion in a control strategy?

d) Define Depth first search algorithm.

e) List the advantages and disadvantages of a depth first search algorithm.

f) What is simple relational knowledge?

g) Using an example explain procedural knowledge.

h) What is the use of Isa attribute in slot and filler structure?

i) Attribute Instance is used to show class membership. Explain?

j) Define inferential adequacy.

k) List the difference between class and meta class.

l) Explain bottom up parsing.

m) Define speech acts.

n) Explain intersectional search in semantic nets.

o) Define tangled hierarchy? How is tangled hierarchy represented?

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Section - B

(9 × 5 = 45)

Q2) Explain the water jug problem and its solution using production rules.

Q3) What are the components of a production system?

Q4) What are the steps involved in building an AI system to solve a particular problem?

Q5) Explain the four categories of a production system.

Q6) What are the differences between Declarative & procedural knowledge?

Q7) Convert the following well formed formula to clause form
¬ Roman(x) V ¬ know(x, Marcus) V hate(x, Caesar) V ¬ hate(y, z) V thinkcrazy(x, y)

Q8) What are the qualities of a good knowledge representation system?

Q9) Explain Unification algorithm.

Q10) Explain the Discourse Integration and Pragmatic analysis phase of natural language processing.

Q11) Represent the following fact using partitioned semantic net

The dog bit the mail carrier.

Q12) How will you represent the following knowledge using conceptual dependency assuming the primitive action PROPEL is available.
John pushed the cart.

Q13) Explain frames using a suitable example.

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