



SASTRA

INSTITUTIONAL MANAGEMENT - AN AGENCY FOR HIGHER EDUCATION

DEEMED TO BE UNIVERSITY

THINK MERIT - THINK TRANSPARENCY - THINK SASTRA

School of Computing
Third CIA Exam - May 2023

Course Code: INT314

Course Name: Artificial Intelligence and Logical Reasoning

Duration: 90 minutes

Max Marks: 50

Answer ANY FOUR questions

PART A

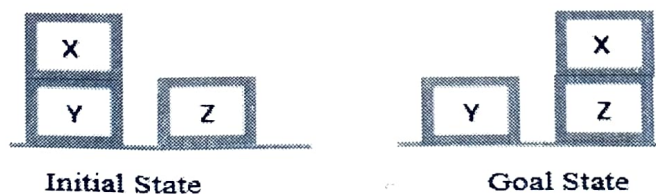
4 x 10 = 40 Marks

1. a. Define joint probability distribution. (2)
- b. List the four phases of knowledge acquisition process. (2)
- c. Apply appropriate rule to remove implication and rewrite the following sentence as disjunction of predicates. (2)
- $\forall x$ Queen(x) \wedge Humble(x) \Rightarrow Great (x). Keep ground term as 'Lara craft'. (2)
- d. Illustrate nested quantifier. (2)
- e. How will you search for short and easy path to reach goal in a maze puzzle. Recall the advantage of that search. (2)

2. A. Find the unifier for the following FOL statements. (5)
 - i) Knows(Alpha,x) - Knows(Alpha,Beta), ii) Knows(Alpha,x) - Knows(y,Gamma), iii) Knows(Alpha,x) - Knows(y,Mother(y) , iv) Knows(Alpha,x) - Knows(x,Gamma), v) Knows(Alpha,x) - Knows(y,z)

B. Define Illustrate and discuss CSP. (5)

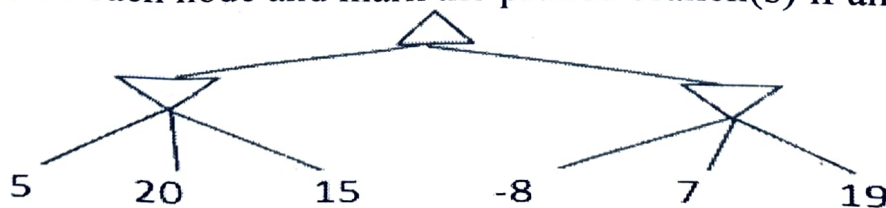
3. Discuss Resolution refutation steps of FOL with example. (10)
4. Summarize the components of Expert Systems. (10)
5. Construct goal stack planning with block world example given below. (10)



Answer ALL questions

PART B 1x 10 = 10 Marks

6. a. Apply alpha beta pruning for the tree given below and provide alpha beta values for each node and mark the pruned branch(s) if any. (3)



- b. Illustrate the process of forward chaining using FOL. (7)

Part A ($10 \times 1 = 10$ Marks)

Answer ALL the Questions, each carries ONE mark. Answer in one sentence.

1. Define Cost Centre.
2. Differentiate between auditing and investigation.
3. Identify the types of functional budgets.
4. List out the significance of auditing.
5. Comment on the importance of IFRS.
6. Draw the format of cash budget.
7. What do you understand by batch costing?
8. Calculate BES from the following data: Sales Rs.5 Lakhs; Variable Cost Rs.3 Lakhs and Fixed Cost Rs.1 Lakh.
9. Bring out the limitations of funds flow statement.
10. State the meaning of environmental audit.

LTC 108
FCA (18)

Part – B ($2 \times 10 = 20$ Marks)

Answer any TWO questions

11. Explain the various stages involved in environmental audit and its benefits to industry.
12. Examine the audit process for computerized accounting system.
13. The sales turnover and profit during two years were as follows:

Year	Sales Rs.	Profit Rs.
2022	2,80,000	30,000
2023	3,20,000	40,000

Calculate: (a) P/V Ratio; (b) BEP; (c) Sales required to earn a profit of Rs.80,000; (d) Profit when sales are Rs.2,40,000; (e) Margin of Safety for the year 2023.

Part – C (1×20=20 Marks)
Answer ANY ONE question.

14. (a) Brief on the industries in which the process costing is applicable. (b) A product passes through three processes 'A', 'B', and 'C' to its completion. During April 2023, 10,000 units of finished product were produced and the following expenses were incurred:

Particulars	Process A (Rs.)	Process B (Rs.)	Process C (Rs.)
Direct Materials	10,000	20,000	10,000
Direct Wages	50,000	40,000	30,000
Direct Expenses	5,000	6,000	10,000

Indirect expenses amounted to Rs. 60,000 which are to be apportioned to the processes on the basis of direct wages. Raw materials worth Rs. 60,000 were issued to Process 'A'. Ignore the question process stocks and prepare the process accounts, showing cost per unit in each process.

15. The following is the cost structure of Chandran Ltd:

Details	Level of activity		
	60%	70%	80%
Output (in units)	2400	2800	3200
Costs	Rs.	Rs.	Rs.
Materials	48,000	56,000	64,000
Wages	14,400	16,800	19,200
Factory overheads	25,600	27,200	28,800
Factory cost	88,000	1,00,00	1,12,000

The factory is considering an increase of production to 90% level of activity. No increase in fixed overheads is expected at this level. The management requires a statement showing all details of factory cost at 90% level of activity.