

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BSc DEGREE EXAMINATION MAY 2026
(Sixth Semester)**

Branch – **COMPUTER SCIENCE WITH DATA ANALYTICS**

ARTIFICIAL INTELLIGENCE

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	The function that maps percept sequences to actions is called (i) Agent program (ii) Performance function (iii) Agent function (iv) Utility function	K1	CO1
	2	Heuristic functions are used to (i) Guarantee solutions (ii) Guarantee solutions (iii) Estimate distance to goal (iv) Store past data	K2	CO1
2	3	Alpha value represents (i) Minimum value for MIN (ii) Maximum value for MAX (iii) Average score (iv) Random Score	K1	CO2
	4	Backtracking is efficient in CSPs because it (i) Tries all solutions (ii) Stops at first failure (iii) Uses heuristics only (iv) Ignores constraints	K2	CO2
3	5	A knowledge-based agent stores information in (i) Database (ii) Knowledge base (iii) Cache memory (iv) Stack	K1	CO3
	6	Why is propositional logic called “very simple logic”? (i) It handles only true/false values (ii) It has few rules (iii) It has no symbols (iv) It avoids inference	K2	CO3
4	7	Variables in First-Order Logic are usually represented by (i) Capital letters (ii) Numbers (iii) Symbols only (iv) Lowercase letters	K1	CO4
	8	First-Order Logic is more powerful than propositional logic because it (i) Uses fewer symbols (ii) Represents objects and relations (iii) Avoids variables (iv) Has no rules	K2	CO4
5	9	Which measure is commonly used to split nodes in decision trees? (i) Euclidean distance (ii) Entropy (iii) Mean Value (iv) Variance	K1	CO5
	10	The main goal of learning theory is to (i) Design hardware (ii) Explain how learning works and generalizes (iii) Store information (iv) Increase speed	K2	CO5

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Describe the structure and working of intelligent agents.	K2	CO1
		(OR)		
	11.b.	Explain how Alpha-Beta pruning improves Minimax search.		
2	12.a.	Summarize the working principle of the Minimax algorithm in game search.	K2	CO2
		(OR)		
	12.b.	Describe how inference helps in reducing the search space.		
3	13.a.	Apply the working principle of a knowledge-based agent to solve a simple real-world problem.	K3	CO3
		(OR)		
	13.b.	Utilize propositional logic to design a simple rule-based agent.		
4	14.a.	Differentiate constants, variables, functions, and predicates in First-Order Logic.	K4	CO4
		(OR)		
	14.b.	Examine the impact of poor knowledge engineering on inference accuracy.		
5	15.a.	Analyze the working mechanism of artificial neural networks and explain how learning takes place?	K4	CO5
		(OR)		
	15.b.	Compare various pruning techniques used in decision trees and analyze their significance.		

SECTION - C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Describe the present state of the art in Artificial Intelligence.	K2	CO1
2	17	Illustrate the Alpha-Beta Pruning technique with a suitable example.	K2	CO2
3	18	Solve a simple planning problem using propositional reasoning.	K3	CO3
4	19	Compare propositional logic and First-Order Logic with respect to expressive power and reasoning capability.	K4	CO4
5	20	Critically evaluate the strengths and limitations of artificial neural networks.	K5	CO5

Z-Z-Z

END