

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

**MSc(SS) DEGREE EXAMINATION DECEMBER 2023
(Ninth Semester)**

Branch – **SOFTWARE SYSTEMS (Five year integrated)**

ARTIFICIAL INTELLIGENCE & EXPERT SYSTEMS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 x 1 = 10)

1. Artificial Intelligence is about _____.
 - (i) Playing a game on Computer
 - (ii) Making a machine Intelligent
 - (iii) Train Machine with your Own Intelligence
 - (iv) Putting your intelligence in Machine
2. Find the best suitable option with regard to AI.

1. Gaming	2. LISP & PROLOG	3. Turing Test	4 Predictive Logic
(i) all 1,2,3, & 4		(ii) 1 & 2 only	
(iii) 1 & 3 only		(iv) 2 & 4	
3. The Hill-Climbing technique stuck for some reasons. which of the following is the reason?

(i) Local maxima	(ii) Ridges
(iii) Plateaux	(iv) All of these
4. Three Major goals of Means end analysis are
 - (i) Scaling, reduction and application
 - (ii) Transformation, Scaling, Rotation
 - (iii) Reduction, Transformation and Application
 - (iv) Scaling, transformation and rotation
5. Which is not a property of representation of knowledge?

(i) Representational Verification	(ii) Representational Adequacy
(iii) Inferential Adequacy	(iv) Inferential Efficiency
6. Which of the following mentioned problems are CSP?

1. N queen problem	2. Map coloring problem
3. Sudoku	4. Puzzle Solving
(i) Only 4	(ii) All 1,2,3 and 4
(iii) 1 and 3	(iv) 3 only
7. Knowledge and reasoning also play a crucial role in dealing with _____ environment.
 - (i) Completely Observable
 - (ii) Partially Observable
 - (iii) Neither Completely nor Partially Observable
 - (iv) Only Completely and Partially Observable
8. What are the approaches of knowledge representation?

(i) Inheritable	(ii) Inferential
(iii) Procedural	(iv) All of the above
9. What is used to initiate the perception in the environment?

(i) Sensor	(ii) Read
(iii) Actuators	(iv) Frames
10. In Expert System, Knowledge Acquisition means,

(i) System implementation	(ii) System maintenance
(iii) Get required domain knowledge by the expert system	(iv) Mapping

Cont...

SECTION - B (25 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks (5 x 5 = 25)

- 11 a. Describe about Problem characteristics.
OR
b. Analyze the characteristics of production system.
- 12 a. Write an algorithm for generate and test strategy.
OR
b. What is Problem reduction? Explain.
- 13 a. Analyze the various approaches to knowledge representation.
OR
b. Explain the various entities in knowledge representation and mapping.
- 14 a. Distinguish between procedural and Declarative knowledge.
OR
a. Write about the Control Knowledge with example.
- 15 a. Describe about the Expert systems.
OR
b. Discuss on representation and domain knowledge.

SECTION -C (40 Marks)

Answer ALL questions
ALL questions carry EQUAL Marks (5 x 8 = 40)
Question no. 16 is compulsory

16. Explain about a problem and state space search with example.
- 17 a. Describe about various implementations of hill climbing.
OR
b. Design the solution using Constraint Satisfaction technique for a problem.
- 18 a. Discuss about several issues in knowledge representation.
OR
b. Summarize in detail Framework for Predicate logic.
- 19 a. Classify and compare the types of Reasoning in detail.
OR
b. Write a detailed note on the Logic programming.
- 20 a. Elucidate on components of Expert system shells with neat diagram.
OR
b. How to representing and using Domain Knowledge? Explain.

Z-Z-Z

END