Reg. No.												

Question Paper Code	12225

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Seventh Semester

Electronics and Communication Engineering

(Common to Computer Science and Engineering, Information Technology & Computer and Communication Engineering)

20CSPC601 - ARTIFICIAL INTELLIGENCE

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List the characteristics of Intelligent Agents.	*2,K1,CO1*
2.	Define Turing test.	*2,K1,CO1*
3.	What is Local Maxima?	*2,K1,CO2*
4.	What is heuristic search?	*2,K1,CO2*
5.	When probability distribution is used?	*2,K2,CO4*
6.	Compare a production-based system with a frame-based system.	*2,K2,CO4*
7.	Define classical planning.	*2,K1,CO5*
8.	How do planning and acting work in the real world?	*2,K2,CO5*
9.	What are the steps involved in NLP?	*2,K1,CO6*
10.	Write about Augmented Transition Network.	*2,K1,CO6*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain in detail the properties of Task Environments.	*13,K2,CO1*
		OR	
	b)	Elaborate in detail the structure of different intelligent agents and their PEAS description.	*13,K2,CO1*
12.	a)	Explain the concepts of the following search strategies with example (i) Best First Search. (ii) A* Algorithms.	*7,K2,CO2* *6,K2,CO2*
		OR	
	b)	Define Constraint Satisfaction problem. Discuss backtracking search for CSPs.	*13,K2,CO2*

13. a) Explain in detail the forward and backward chaining with an example. *13,K2,CO4*

OR

b) Explain unification algorithm with an example. *13,K2,CO4*

14. a) Write STRIPS representation for the Air Cargo and Blocks problem. *13,K3,CO5*

OR

b) Construct Partial order planner for the problem- "Buy Tea, Biscuits and Books". *13,K3,CO5*

15. a) What are the different types of Chatbots and explain them with examples. *13,K2,CO6*

OR

b) (i) Discuss about Phase Structure Models. *7,K2,CO6*
(ii) Explain about Syntactic Analysis. *6,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Explain and solve the logic in crypt arithmetic problem for the below Problem: *15,K3,CO3*

(i)
```
  BASE
 +BALL
------
 GAMES
------
```

(ii)
```
  CROSS
+ ROADS
-------
 DANGER
-------
```

No two letters have the same value. The sums of the digits must be shown in the problem

OR

b) Solve the below game tree problem by using alpha beta pruning *15,K3,CO3*