Term Test#02 Course Code—**CSE 337 (AI)** Date—**December 18, 2022**
Time—**30 Minutes** Set—**2029** Total Marks#20

(You must answer all the questions)

1. Consider the following half-played 3 × 3 tic-tac-toe game. Here, **O** is your (Player 1) symbol and **X** is your opponent's (Player 2) symbol. Here, you played first and you have just given your 3rd move.

X	O	X
	O	
O		

Now, answer the following questions sequentially.

(a) Draw the rest of the game tree considering the above state as root. No need to go further if one player wins. 7

(b) How many terminal nodes are generated? Why is not it equal to 4!? 1 + 1

(c) Apply minimax algorithm on the generated game tree (Utility function for player 1: win = 1, lose = -1, draw = 0). 5

(d) Draw the best possible moves of player 1. Is it a win, lose or draw? 2

2. Sketch a graph to visualize the following terms: Shoulder, Global Maximum, Local Maximum, Flat Local Maximum. 4

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Term Test#**01** Course Code—**CSE 337 (AI)** Date—**October 27, 2022**
Time—**30 Minutes** Set—**2011** Total Marks#**20**

(You must answer all the questions)

1. (a) Define **Rational Agent** and **Limited Rationality**. 2

   (b) Compare **Computer** and **Human Brain** with respect to **Cycle Time**, and **Operation/sec**. 4

   (c) Write on two **state of the art** AI systems. $2 \times 2 = 4$

2. (a) Write the **PEAS** description for a **Robot Soccer Player**. 2

   (b) What is **simple reflex agent**? Sketch its diagram and explain it. $1 + 2 + 1 = 4$

3. What is **admissible heuristic**? "The cost of an optimal solution to a relaxed problem is an admissible heuristic for the original problem" — Explain. 4

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