

Roll No



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF DESIGN  
MID TERM EXAMINATION - APR 2023**

**Semester :** Semester VI - 2020

**Course Code :** BDG311

**Course Name :** Sem VI - BDG311 - Basic Ai In Games

**Program :** BDG

**Date :** 15-APR-2023

**Time :** 9:30AM - 11:00AM

**Max Marks :** 60

**Weightage :** 30%

**Instructions:**

- (i) Read all questions carefully and answer accordingly.*
- (ii) Question paper consists of 3 parts.*
- (iii) Scientific and non-programmable calculator are permitted.*
- (iv) Do not write any information on the question paper other than Roll Number.*

**PART A**

**ANSWER ALL THE QUESTIONS**

**(2 X 2 = 4M)**

1. What is AI (Artificial Intelligence)? Describe the 4 types of AI.

(CO2,CO1) [Knowledge]

2. What is Game AI? Mention its importance in video games.

(CO1,CO2) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**(2 X 3 = 6M)**

3. Differentiate between True Artificial Intelligence and Game Artificial Intelligence.

(CO2,CO1) [Comprehension]

4. Discuss the 3 types of Machine Learning in detail.

(CO2,CO1) [Comprehension]

## PART C

### ANSWER ALL THE QUESTIONS

(2 X 25 = 50M)

5. What is a Decision Tree (DT)? Explain the various components that make up a DT (viz. Root, Decision Node, Branch and Leaf). Read the following scenario and create a DT diagram for the same. Please include all the following points:

- What are the important decisions that the player makes? What are the Decision Nodes for this scenario?
- What are the final outcomes of this scenario? What are the leaves for this scenario?
- Create a flowchart depicting the DT for this scenario. Make sure you are using the correct shapes while creating the flowchart.

#### Scenario Details:

The player enters a boxing match. He defeats all other opponents and now must face off last year's challenger. Before the match begins, the challenger wants to meet the player in private. The player has a choice to either honor his request or directly start the match.

If the player rejects the offer, the scenario continues.

If the player meets the challenger, he requests the player to intentionally lose the match. He desperately needs the prize money to feed his family. What will you as the player do?

If you decide to lose intentionally, the challenger mocks you for believing such a sob story. Scenario ends.

If you decide to not to lose intentionally, you win the match. After the match, the player is given one last option: What do you do with the prize money? Do you claim it for yourself? Do you split it with the challenger? Or do you give all the money to the challenger?

If you claim it for yourself, the crowd boos you and bans you from the arena. Scenario ends.

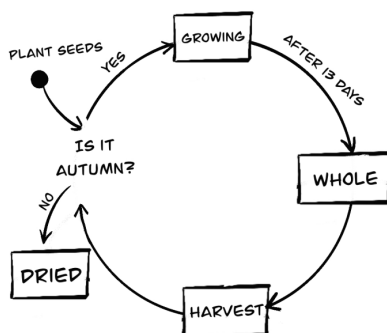
If you split the prize, the crowd cheers you on. Scenario ends.

If you give all the money, the crowd makes you the hero of the arena and you get double the money from the boxing association. Scenario ends.

(CO2) [Application]

6. What is a Finite State Machine (FSM)? Explain the various components that make up an FSM (viz. State, Transition, Trigger and State Machine Diagram). The attached image shows the different states of a pumpkin for a farming game. Study it carefully and create and Finite State Machine Diagram for the same. Make sure all the following points are covered in your answer:

- Write down all the states the Pumpkin cycle through and explain the changes in behavior that occur for each state.
- Mention what conditions cause the states to transition from one state to another.
- Finally create an FSM flowchart for the Pumpkins. Give extra importance to the shapes used to depict states and transitions.



(CO2) [Application]