PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF DESIGN
END TERM EXAMINATION - JUN 2023

Semester : Semester VI - 2020
Course Code : BDG311
Course Name : Sem VI - BDG311 - Basic Ai In Games
Program : BDG

Date : 16-JUN-2023
Time : 1.00PM - 4.00PM
Max Marks : 100
Weightage : 50%

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 5 = 10M)

1. What is a Behavior Tree? What is its purpose in video games and how does it work?

   (CO1,CO3,CO2) [Knowledge]

2. What are AI based Game Design Patterns? From the following, explain 5 concepts in detail with suitable game examples.

   - AI is Visualized.
   - AI as Role-Model.
   - AI as Trainee.
   - AI is Editable.
   - AI is Guided.
   - AI as Co-Creator.
   - AI as Adversary.
   - AI as Villain.
   - AI as Spectacle.

   (CO1,CO2,CO3) [Knowledge]

3. The attached image shows the different behavior states of a game's enemy. Study it carefully and create a Behavior Tree Diagram for the same. Please include all the following points:

    - Explain what a Behavior Tree is. Why is it used in games?
    - Describe the behavior in each state of the enemy based on the image.
    - How does the state change from one to the next? What are the transitions?
    - Create a flowchart depicting the BT for the enemy. Make sure you are using the correct shapes while creating the flowchart.
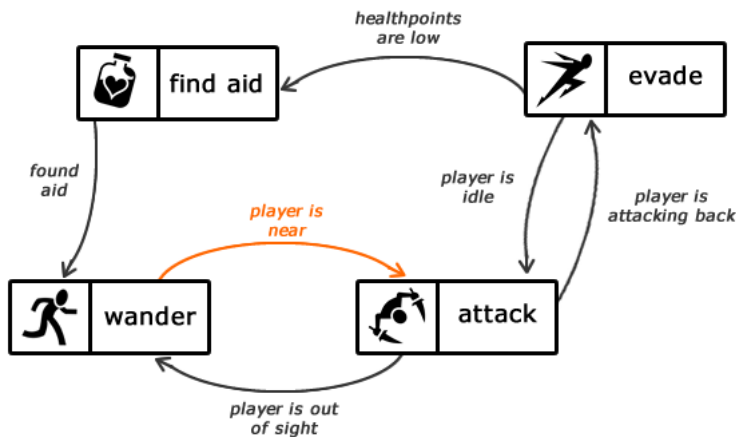
(CO1,CO2,CO3) [Comprehension]

4. What are AI based Game Desing Patterns? Using these patterns design the behaviors of AI agents for a game. (This can be normal enemy AI, Boss AI or NPCs of a game) Please pay attention to all the following point:

    - Explain what AI Based Game Design Patterns are.
    - Mention all the Patterns you utilized while designing AI for your game.
    - Describe the behavior in each state of the AI you designed.
    - How does the state change from one to the next? What are the transitions?
    - Create a flowchart depicting the FSM for the AI. Make sure you are using the correct shapes while creating the flowchart.

(CO3,CO2,CO1) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS   **(1 X 60 = 60M)**

5. Present the given topic and defend the jury clarification.

(CO3,CO1,CO2) [Application]