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**PRESIDENCY UNIVERSITY**

**Bengaluru**

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| **End - Term Examinations – JANUARY 2025** |
| **Date:** 07 – 01- 2025 **Time:** 09:30am – 12:30pm |

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| --- | --- | --- |
| **School:** SOCSE | **Program:** B. Tech-CSE | |
| **Course Code :** CSE3073 | **Course Name :** Game Design and Development | |
| **Semester**: VII | **Max Marks**: 100 | **Weightage**: 50% |

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| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **24** | **24** | **26** | **26** | **--** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Answer ALL the Questions. Each question carries 2marks. 10Q x 2M=20M** | | | | |
| **1** | Define game as per Sid Meier. | **2 Marks** | **L1** | **CO1** |
| **2** | What is “lusory attitude”. | **2 Marks** | **L1** | **CO1** |
| **3** | List the four factors affecting game balance. | **2 Marks** | **L1** | **CO2** |
| **4** | Recall the barter system type of economy from game development perspective. | **2 Marks** | **L1** | **CO2** |
| **5** | List any two data types used in C#. | **2 Marks** | **L1** | **CO3** |
| **6** | Recall the code for initializing a string array of size 4 in C#. | **2 Marks** | **L1** | **CO3** |
| **7** | Name the four fields/members in Color type. | **2 Marks** | **L1** | **CO3** |
| **8** | Define a well-rounded game designer. | **2 Marks** | **L1** | **CO4** |
| **9** | What is ESRB rating. | **2 Marks** | **L1** | **CO4** |
| **10** | What is the need for one-pager/one-sheeter GDD. | **2 Marks** | **L1** | **CO4** |

**Part B**

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| --- | --- | --- | --- | --- | --- |
| **Answer the Questions Total 80 Marks.** | | | | | |
| **11.** | **a.**  **b.** | Explain the five definitions for a game.  Explain in detail the 3 Cs framework for game design. | **10+10=20 Marks** | **L2** | **CO1** |
| **Or** | | | | | |
| **12.** | **a.**  **b.** | Explain in detail triangle of weirdness with suitable examples.  Explain in detail the MDA framework | **10+10=20 Marks** | **L2** | **CO1** |
|  |  |  |  |  |  |
| **13.** | **a.** | **Consider the hit table:**   |  |  | | --- | --- | | **Hit Table** | | | **Range** | **Hit Weight** | | **0 - 19** | **10%** | | **20 - 34** | **25%** | | **35 - 49** | **40%** | | **50 - 59** | **50%** | | **60-79** | **75%** | | **80 - 94** | **80%** | | **95 - 99** | **100%** |   Initial values of both red and blue players are: HP=100, AV=50, DV=20  Using the value above, demonstrate the four combat models:   1. HP = HP – AV 2. HP = HP – AV + DV 3. HP = HP – wA . AV + wD . DV 4. HP = min(HP, HP – wA . AV + wD . DV)   for the following attacks.   |  |  |  |  | | --- | --- | --- | --- | | Turn # | Attack by | Red’s random number | Blue’s random number | | 1 | red | 23 | 56 | | 1 | blue | 97 | 11 | | 2 | red | 88 | 19 | | 2 | blue | 38 | 65 | | **20 Marks** | **L3** | **CO2** |
| **Or** | | | | | |
| **14.** | **a.**  **b.** | Demonstrate how a gun combat system based on range can be created for guns pistol, shotgun, rife, sniper.  Assume that maximum range is 10, and a dice is used to decide whether an enemy in a cell is hit or not. We use the condition, if dice value is bigger than or equal to cell value, we decide that the enemy is hit.  Clearly draw the range table with dice values.  What is the need for probability in game design.  Consider the following hit table   |  |  | | --- | --- | | Hit Table | | | Range | Hit Weight | | 0 - 29 | 10% | | 30 - 59 | 30 % | | 60 - 84 | 60 % | | 85 - 99 | 100% |   Demonstrate the working for the model  HP = HP – wA . AV + wD . DV  for the following cases, if random value of attacker is 63, and defender is 38.  Case 1:  For attacker: HP=10, AV=20, DV = 20  For defender: HP=10, AV=20, DV = 20  Case 2:  For attacker: HP=20, AV=40, DV = 40  For defender: HP=10, AV=20, DV = 20 | **10+10=20 Marks** | **L3** | **CO2** |

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| **15.** | **a.**  **b.** | Explain the different types of loops in C#.  Outline the anatomy of a class in C# | **10+10=20 Marks** | **L2** | **CO3** |
| **Or** | | | | | |
| **16.** | **a.**  **b.** | Explain the different types of collections in C#.  Explain the different types of bugs in Unity development. | **10+10=20 Marks** | **L2** | **CO3** |

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| **17.** | **a.**  **b.** | Explain how Sound prototypes are built for games.  Show the game design document you generated for your gaming project, highlighting the key sections of the document. | **10+10=20 Marks** | **L2**  **L3** | **CO4** |
| **Or** | | | | | |
| **18.** | **a.**  **b.** | Explain the key aspects of the game design documentation process.  In the game that you developed in your course project, show how the followings part was designed along with relevant code fragments. i. Movement: Show how the movement was performed in the code.  ii. Collider: List the different types of colliders available. Which one did you use in your project and why. iii. Victory: What is the goal of a game, according to FDD framework. What was the victory condition for your game. If you chose not to have a victory/loss condition, why was it so. If you used a victory/loss condition, how was it performed in code. | **10+10=20 Marks** | **L2**  **L3** | **CO4** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***