

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, March 2019

Programme Name : B.Tech CS (GG + MC)

Semester : VI

Course Name : Introduction to Game Programming

Time : 03 hrs

Course Code : CSEG 349

Max. Marks : 100

Nos. of page(s) : 2

Instructions: Attempt all questions.

SECTION A

S. No.		Marks	CO
Q 1	Explain how to change the pivot point of a game object in unity.	4	CO4
Q 2	Write 2 lines of description about four components which can be applied to any game object.	4	CO3
Q 3	Describe some built-in unity technique to achieve frame rate independence. Also explain what could be the possible reason to create an empty game object.	4	CO3
Q 4	Consider the scenario of an arcade fighting game like Tekken in which the two main characters are always visible on the screen. Write any strategy by which you can achieve the same in unity.	4	CO1
Q 5	<i>Some functions in unity like "start" and "update" never get explicitly called, still these functions gets executed.</i> Explain this phenomenon in context of Object Oriented Programming Techniques.	4	CO5

SECTION B

Q 6	Do you agree with the statement given below: "No Rigid Body component is required for the development of 'snake and ladder' video game." Justify your answer with reasons.	10	CO3
Q 7	Demonstrate the utility of each type of container in Python with code. OR Demonstrate the utility of Generics in C# with code.	10	CO1
Q 8	Define the following terms:	10	CO1

	<ol style="list-style-type: none"> 1. Game Engine 2. Video Game Genera 3. Prefabs 4. Camera 5. Hierarchy window 		
Q 9	<p>What is the role of access modifiers in object-oriented programming techniques and how it is related to abstraction? Explain along with code.</p>	10	CO2
SECTION-C			
Q 10	<p>For a game involving firing, write code snippet for moving a bullet and colliding it with object.</p> <p style="text-align: center;">OR</p> <p>Explain scripting flowchart with proper diagram with the help of an example involving the bullet firing game.</p>	20	CO2
Q 11	<p>While designing an AI for a game like Scrabble the developer feels the requirement of a method with following properties:</p> <ol style="list-style-type: none"> 1. The method takes one string argument pattern with asterisks like “b**ut*ful”. 2. The method should be able to return a word string which should be able to replace all the asterisks with characters such that the word string became a meaningful word. For example, if the input string is “b**ut*ful” the return word can be “beautiful”. <p>Write the method in any preferred language. #Assume that a file name “Dictionary.txt” exists with the list of all the meaningful words. Each line of this file represents a word without spaces. Use of predefined libraries is prohibited.</p>	20	CO5

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SECTION A

S. No.		Marks	CO
Q 1	How can we compute the position of a game object relative to the other game object?	4	CO4
Q 2	Write down unity component corresponding to the given behavior: a. For applying physics (speed, force, gravity etc.) to a game object. b. For changing color/texture. c. For changing position. d. For checking collisions.	4	CO3
Q 3	What is the utility of the following: a. FixedUpdate b. deltaTime	4	CO3
Q 4	Write down the working of lookAt function.	4	CO1
Q 5	Name and describe the working of any two functions defined inside the MonoBehaviour class.	4	CO2

SECTION B

Q 6	Differentiate between mutable and immutable containers in Python.	10	CO3
Q 7	Demonstrate the utility of each type of container in Python with code. OR What is the use of Generic operator "<>" in C#. Explain with code.	10	CO2
Q 8	Explain how virtual keyword can help to remove the ambiguity which arises due to multiple inheritance.	10	CO4
Q 9	What is the role of access modifiers in object-oriented programming techniques and how it is related to abstraction? Explain along with code.	10	CO2

SECTION-C

Q 10	<p>For a game involving firing, write code snippet for moving a bullet and colliding it with object.</p> <p style="text-align: center;">OR</p> <p>Explain scripting flowchart with proper diagram and example involving the bullet firing game</p>	20	CO1
Q 11	<p>While designing an AI for a game like Scrabble the developer feels the requirement of a method with following properties:</p> <ol style="list-style-type: none">1. The method takes one string argument pattern with asterisks like “b**ut*ful”.2. The method should be able to return a word string which should be able to replace all the asterisks with characters such that the word string became a meaningful word. For example, if the input string is “b**ut*ful” the return word can be “beautiful”. <p>Write the method in any preferred language. #Assume that a file name “Dictionary.txt” exists with the list of all the meaningful words. Each line of this file represents a word without spaces. Use of predefined libraries is prohibited.</p>	20	CO5