


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
<b>Course: Advanced Game Programming Algorithm</b> <b>Program: B.Tech CSE GG</b> <b>Course Code: CSGG 3011</b>		<b>Semester: V</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions: Read and follow the instructions written on the answer sheet front page</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Which of the following games can get more benefit from the Unity's Rigid body collider component and why: a. A quiz based game similar to KBC simulator b. An Arcade fighting game similar to Tekken	4	CO1
Q 2	Consider the development of Hex/Grid Turn based game. Explain which data structure would be most suitable for implementation of the grid/hex.	4	CO1
Q 3	Find the 2x2 matrix that corresponds to a Rotation transformation which would tilt the y-axis (anti-clockwise) by 45 degrees.	4	CO2
Q 4	Which one of the following techniques can be used for faster texture filtering? a. Nearest Neighbor b. Linear interpolation	4	CO2
Q 5	Fill in the blanks: ..... function is called explicitly to execute the registered display function in OpenGL.	4	CO3
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q 6	Why having proper save/load system of the game is essential for <i>immersion</i> of the game? Also mention various appropriate game genre and save system combinations.	10	CO3
Q 7	While designing an online multiplayer game the developer should always be extra careful with the frame rate independence. Why?	10	CO1
Q 8	Differentiate between algorithm and heuristics with their proper application domain	10	CO2
Q 9	Illustrate the OpenGL event queue architecture diagram with proper event labeling.	10	CO3
<b>OR</b>			

	Describe various opengl functions which primarily use function registering mechanisms.		
<b>SECTION-C</b> <b>(2Qx20M=40 Marks)</b>			
Q 10	Describe thoroughly different mechanisms through which story could be progressed in a computer Game?  <b>OR</b>  Describe in thorough notes different plot types which can be incorporated in interactive story telling.	<b>20</b>	<b>CO4</b>
Q 11	Consider the game of wordle, Design an algorithm/pseudocode/code which return each character of the guessed word with one of the qualifier (N: not in the secret word, G: In the secret word and in the correct place, Y: In the secret word but not in correct place). The prototype of the pseudocode is given below: Wordle_check(secret_word, guessed_word) 1.XYZ 2.XYZ 3.XYZ . . . N.Return [(guessed_word[0], N), (guessed_word[1], G), ...]	<b>20</b>	<b>CO5</b>