



UNIVERSITY OF EMBU

2017/2018 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (COMPUTER SCIENCE)

CSC 481 COMPUTER GAMES PROGRAMMING

DATE: APRIL 5, 2018

TIME: 2:00 PM – 4:00 PM

INSTRUCTIONS:

Answer Question ONE and ANY other two Questions

QUESTION ONE (30 MARKS)

- a) C++ is leveraged by millions of programmers throughout the world. Explain its reasons for popularity in game programming (5 marks)
- b) Computer games can be classified into different categories. With an example explain two such types of games (5 marks)
- c) Explain the game structure using C++ gaming software (5 marks)
- d) Write a stats game program to keep track of the players score ,the number of enemies the player has destroyed and whether he has the shield or not (5 marks)
- e) Computer games are said to be looping? Explain with the aid of an example (5 marks)
- f) What are networked games? Write a source code for a simple network game (5 marks)

QUESTION TWO (20 MARKS)

- a)
 - i) Describe how to add 3D objects to the scene using Unity (3 marks)

ii) What is a scene? Explain step by step how you will create a scene using the unity software (7 marks)

b) What is a texture? .Explain how different forms of rendering are done (6 marks)

c) Is lighting significant for constructing the scene. Explain two types of lighting (4 marks)

QUESTION THREE (20 MARKS)

a) What is Animation? Explain animation into details (10 marks)

b) What are the phases in game development ?Explain the process and the people involved in each of the processes (10 marks)

QUESTION FOUR (20 MARKS)

a) What is AI for games ?Give to examples of AI games (4 marks)

b) Explain the following terms as used in the AI game (6 marks)

i) Heuristics

ii) Algorithms

c) Explain the differences between the directed weighted and weighted graphs with the aid of a diagram to illustrate how they can be translated into games (5 marks)

d) Explain why AI is a significant genre for games programming (5 marks)

QUESTION FIVE (20 MARKS)

a) Write a source code program for the multiplayer game (10 marks)

b) Explain any two API for adding audio data into a game (4 marks)

c) Describe how DirectX can be used to develop computer games (6 marks)

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