The Open University of Sri Lanka

Faculty of Engineering Technology

Department of Electrical and Computer Engineering

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	**: ECI3168/EEI3368/EEI3668 Graphics and Multimedia design**
Academic Year	**: 2020/21**
Date	**: 15th December 2021**
Time	: 0930-1230hrs
Duration	**: 3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. Answer **all** questions in Section A
3. Questions in Section A carry equal marks.
4. Answer for Section A should mark in this sheet.
5. Attached this answer sheet with Section B and Section C answer book.

ANSWER SHEET FOR SECTION A

INDEX NO:

1)
     i   ii   iii   iv

2)
     i   ii   iii   iv

3)
     i   ii   iii   iv

4)
     i   ii   iii   iv

5)
     i   ii   iii   iv

6)
     i   ii   iii   iv

7)
     i   ii   iii   iv

8)
     i   ii   iii   iv

9)
     i   ii   iii   iv

10)
     i   ii   iii   iv

The Open University of Sri Lanka

Faculty of Engineering Technology

Department of Electrical and Computer Engineering

Study Programme	: Bachelor of Software Engineering Honours
Name of the Examination	: Final Examination
Course Code and Title	: **ECI3168/EEI3368/EEI3668 Graphics and Multimedia design**
Academic Year	: **2020/21**
Date	: **15th December 2021**
Time	: 0930-1230hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Fifteen (15)** questions in **Five (5)** pages.
3. **Section A** consist of Ten (10) questions and **Section B** consist of Two (2) questions which you have to select one and **Section C** consist of Three (3) questions.
4. **Answer all questions in Section A and Section C.**
5. **Answer only One (1) question from Section B.**
6. Questions in **Section A** carry equal marks. Question 1 in **Section B** carry 10 marks and Questions in **Section C** carry 20 marks for 1st two questions and the last question carry 40 marks.
7. Answer for **Section A** should mark in the answer sheet provided.
8. Answer for **Section B & Section C** should write in the answer book provided and each question should commence from a new page.
9. This is a Closed Book Test **(CBT)**.
10. Answers should be in clear handwriting.
11. Do not use red colour pen.

1

Section A

Multiple Choice Questions [10 marks]

Answer all questions.

1. What are the six (6) components of multimedia
   a. Audio, Video, Laptop, TV, Camera, projector
   b. Graphic, letters, Audio, Video and Animation, web
   c. Audio, Video, Motion Graphics, Web, Storytelling
   d. Text, Images, Audio, Video and Animation, web

2. What the characteristics of multimedia are;
   a. Intuitive Interface, Immersive Experience, Better understanding, Cost effectiveness
   b. They must be computer-controlled, They are integrated, The information they handle must be represented digitally & The interface to the final user may permit interactivity.
   c. Discrete media, Continuous media, Immersive Experience, They are integrated
   d. The interface to the final user may permit interactivity, They must be computer-controlled, Intuitive Interface, They must be held digitally

3. What is the correct definition for Hypermedia
   a. Hypermedia is web consist of hypertext
   b. *Hypermedia* is the field concerned with the computer-controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media.
   c. Hypermedia is an extension to what is known as hypertext, or the ability to open new Web pages by clicking text links on a Web browser.
   d. Hypermedia can be considered as one of the multimedia applications.

4. What are three (3) types of resolutions
   a. Image resolutions, Display resolutions & Density resolutions
   b. Density resolutions, Color resolutions & Display resolutions
   c. Image resolutions, Display resolutions, Colour resolutions
   d. Frequency resolutions, Density resolutions, Power resolutions

5. Name the five (5) types of animation and briefly describe them
    a. Bitmap Animation, Vector Animation, Frame-Based Animation, 2D Animation, 3D Animation
    b. 2D Animation, 3D Animation, Character Animation, Object Animation, Animal Animation,
    c. Character Animation, Lighting Animation, Nature Animation, Key Frame Animation, Motion Animation,
    d. 2D Animation, 3D Animation, Key Frame Animation, Motion Animation, Character Animation,

6. What is the wrong statement of MPEG codec
    a. MPEG-2 : (1995) a standard for digital television. Introduced for compression and transmission of digital TV signals. Still limited interactivity
    b. MPEG – 1 Support mid bit rates.
    c. MPEG-4 Originally –A standard for very low bit rate coding of limited complexity audio-visual material.
    d. MPEG-4 video is optimizedforlow(<64kbps),intermediate(64-384kbps),andhigh(384-4Mbps)bitrates.

7. What are the four (4) components in the Developer's perspectives in a multimedia evaluation system
    a. Content, Performance, Delivery, Interface
    b. Content, Specification, User Interface, Delivering
    c. Schedule, Content, Development, Delivery
    d. Content, Design, Development, Delivery

8. What are the four (4) stages of a project
    a. Planning, Costing, Producing, Testing, Delivering
    b. Producing, Developing, Testing, Completing
    c. Planning & Costing, Designing & Producing, Testing, Delivering
    d. Planning & Producing, Designing & Developing, Testing & Debugging, Delivering

3

9. What is the rule of thirds
   a. If a factor is repeated multiple times, then the product can be written in exponential form xn. The positive integer **exponent** n indicates the number of times the **base** x is repeated as a factor.
   b. the rule of thirds is a type of composition in which an image is divided evenly into thirds, both horizontally and vertically, and the subject of the image is placed at the intersection of those dividing lines, or along with one of the lines itself.
   c. The third law of motion states that if a body exerts a force on a second body, the second body exerts a force that is equal in magnitude and opposite in direction to the first force. So for every action force, there is always a reaction force.

10. What is YUV Stand for?
    a. Y: Chrominance, U: a luminance component (Red colour), and V: a luminance component (Blue Colour)
    b. Y: luminance component, U: Red Colour, and V: Blue Colour
    c. Y: Brightness, U: Green colour, and V: Red Colour
    d. Y: luminance component, U: a chrominance component, and V: a chrominance component

Section B

Question 2 [10 marks]

Select one from the following questions.

XYZ is a newly introduced life insurance. They cover every kind of insurance policy. They need to promote their brand as TV commercials and News Paper & Magazine Advertisements (Coloured).

Question 1: Explain following   **(10 marks)**

1. Briefly explain what is 3D in your word?   (2 marks)
2. Briefly explain how to do model a bottle using 3D software   (2 marks)
3. Briefly explain what is the link between UV mapping with texturing (3 marks)
4. Briefly explain what is rigging and how to do rigging   (3 marks)

Question 2: Explain the following   **(10 marks)**

4

1. Discuss why it is necessary to use CMYK colour mode for paper/Magazine advertisemen
   (2 marks)
2. Briefly explain the difference between RGB and YCbCr. Give examples
   (4 marks)
3. Briefly explain whats are the image processing techniques
   (4 marks)

Section C

Question 3 [80 marks]

Answer all questions

Question 1: Discuss the following topics and give the relevant examples   **(20 marks)**

1. Define multimedia and discuss them briefly   (5 Marks)
2. Briefly explain what is a graphic design and give precise examples   (5 Marks)
3. What are the common designing principles used in graphic designing? Discuss
   them briefly   (5 Marks)
4. Briefly explain the process of animation   (5 marks)

Question 2: Discuss the following topics and give the relevant examples   **(20 marks)**

1. Define Munsell Colour System   (5 Marks)
2. Briefly explain how to convert Analogue audio to Digital   (5 Marks)
3. Discuss what is Chroma subsampling   (5 Marks)
4. Briefly discuss the broadcasting standards   (5 Marks)

Question 3: Briefly explain these;   **(40 marks)**

1. Discuss the differences between YIQ and YUV.   (10 marks)
2. Explain Image processing techniques   (10 marks)
3. Explain the two types of video signals and discuss the types of analogue video
   signals with examples   (10 marks)
4. Discuss differences between temporal and spatial scalability   (10 marks)

5