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**KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY  
UNIVERSITY EXAMINATIONS, 2020/2021 ACADEMIC YEAR  
THIRD YEAR, FIRST SEMESTER EXAMINATION  
FOR THE DEGREE OF BACHELOR BUSINESS INFORMATION  
TECHNOLOGY**

**KBI 2411 - MULTIMEDIA DEVELOPMENT**

Date: 11<sup>th</sup> December, 2020

Time: 2.30pm – 4.30pm

**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS**

**QUESTION ONE (30 MARKS)**

- a) Distinguish between the RGB and CMY color models and mention their transformation. (6 Marks)
- b) Calculate the storage penalty in Kilobytes of storing an image with a resolution of 720 x 480 as a 32-bit color image as compared to an 8-bit gray level image. (6 Marks)
- c) Explain the three major types of video signals. (6 Marks)
- d) What is a color look-up table and how is it used to represent color? (6 Marks)
- e) Describe six properties of sound with the aid of a relevant diagram. (6 Marks)

**QUESTION TWO (20 MARKS)**

- a) Distinguish between analog signal and digital signal. (2 Marks)
- b) Explain the digitization process using an appropriate diagram. (8 Marks)
- c) Explain five multimedia authoring metaphors. (10 Marks)

**QUESTION THREE (20 MARKS)**

- a) Outline the Huffman algorithm and illustrate how it works. (10 Marks)
- b) Explain human vision with respect to spectral sensitivity of the eye and use an appropriate diagram. (10 Marks)

**QUESTION FOUR (20 MARKS)**

- a) Explain the differences between bitmap and vector-drawn images from the creation of the images, the file size, downloading time and applications (8 Marks)
- b) Outline the type and image file format which are suitable for graphics design and justify your answer. (6 Marks)
- c) Describe the major classes of multimedia systems. (6 Marks)

**QUESTION FIVE (20 MARKS)**

- a) Distinguish between Digital convergence and Media convergence. (4 Marks)
- b) Describe the technical design issues faced during the development of multimedia projects. (6 Marks)
- c) With the help of a well labelled diagram explain the process involved in the quantization and transmission of audio signals. (8 Marks)