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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 OF SCIENCE
(COMPUTER SCIENCE)

KCS 302 - MULTIMEDIA SYSTEMS

Date: 11th 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)