



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF SCIENCE (MATHEMATICS AND COMPUTER SCIENCE)

SIT 240: MULTIMEDIA SYSTEMS

DATE: 13/4/2023

TIME: 2:00 – 4:00 PM

Instructions:

This paper consists of FIVE questions

Answer question ONE and other TWO questions in this paper

QUESTION ONE-COMPULSORY (30 MARKS)

- a) Distinguish between Multimedia and Hypermedia (4 marks)
- b) Outline FOUR basic characteristics of a multimedia presentations (4 marks)
- c) Explain FOUR application areas of Multimedia products (6 marks)
- d) A multimedia presentation has 30 minutes of CD-quality digital audio in .wav files. Describe TWO storage features required for these files (4 marks)
- e) As a multimedia author explain FOUR factors you will consider when integrating text in a presentation to ensure legibility (6 marks)
- f) Explain THREE factors that determine the visibility of images on a website (6 marks)

QUESTION TWO (20 MARKS)

- a) Explain the significance of data encryption in multimedia production (2 marks)
- b) Distinguish between static media and dynamic media giving TWO examples in each case (4 marks)
- c) Using suitable examples, explain FOUR models used in multimedia authoring (8 marks)
- d) Describe FOUR hardware features that a Multimedia System should possess (6 marks)

QUESTION THREE (20 MARKS)

- a) For each of the following media types, explain the effects of the Nyquist's Sampling Theorem on the quality of the data and the form in which sampling effects manifest themselves in the actual data: graphics, images, audio and video. (8 marks)
- b) Describe TWO scenarios where lossless data compression is preferred over lossy data compression (6 marks)
- c) Using a suitable example in each case, explain TWO techniques used in creating animation for a multimedia product. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Explain THREE advantages of RAID technology as a medium for the storage and delivery of large data (6 marks)
- b) Outline FOUR messages that spoken text convey which written text cannot (6 marks)
- c) You have been called upon to assist in color selection for website development for your company.
 - i. Describe FOUR color models that you will consider for selection (6 marks)
 - ii. Justify the model you will prefer for the task (2 marks)

QUESTION FIVE (20 MARKS)

- a) Multimedia products integrate various elements that need centralized storage for easy access. Analyze the need of databases in multimedia presentations (4 marks)
- b) Outline the process of digitizing video for a multimedia product (8 marks)
- c) Explain FOUR factors that determine quality of audio in for a multimedia product (8 marks)