



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE

UNIVERSITY ORDINARY EXAMINATION

2023/2024 ACADEMIC YEAR

**FOURTH YEAR FIRST SEMESTER EXAMINATION FOR BACHELOR OF
SCIENCE IN SOFTWARE ENGINEERING**

SCS404: MULTIMEDIA SYSTEMS

DURATION: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer QUESTION ONE and any other TWO Questions.
2. Mobile phones are not allowed in the Exam room.
3. You are not allowed to write on this examination question paper.

SECTION A – ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30MARKS)

- a. Define the following terms: (10marks)
 - i. Multimedia
 - ii. Text
 - iii. Hypermedia
 - iv. Animation
 - v. Digital signal processing (DSP)
- b. Discuss at least three important characteristics of a multimedia system. (6marks)
- c. Name the four system elements to consider in virtual environment as used in multimedia systems. (4marks)
- d. Name five uses of multimedia systems. (5marks)
- e. Multimedia networking uses multiple computers, connected by communication channel for information and resource sharing. Name five categories of multimedia networking. (5marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

- a. Discuss three multimedia video standards as used in multimedia systems. (6marks)
- b. During multimedia streaming, there are problems encountered. Discuss two such problems. (4marks)
- c. Discuss the functions of session initiation protocol (SiP) as used in multimedia systems. (6marks)
- d. Multimedia applications can be subdivided into different categories, each marking particular demands for support on the operating system or routine environment. Suggest three application categories. (4marks)

QUESTION THREE (20 MARKS)

- a. Multimedia design includes a combination of content delivered in a variety of different forms. Name five examples of the applications of state-of-the-art multimedia content. (5marks)
- b. List advantages of interactive multimedia. (6marks)
- c. Discuss, giving examples some basic tools for developers to create interactive development for use in multimedia environment. (5marks)
- d. Differentiate between analogue video and digital video as used in multimedia. (4marks)

QUESTION FOUR (20 MARKS)

- a. List the four key technologies used in the recent audio coding algorithms. (4marks)
- b. List at least four types of animations. (4marks)
- c. Differentiate between spatial compression and temporal compression. (8marks)
- d. Discuss at least two types of multimedia authoring systems. (4marks)