



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN INFORMATION TECHNOLOGY

EIT 1130 : MULTIMEDIA SYSTEMS

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: FEBRUARY/MARCH 2012

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions in **TWO** sections **A & B**

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question are as shown

This paper consists of **THREE** printed pages

SECTION A (COMPULSORY)

Question one 30 marks

- a With suitable examples, explain the following elements of multimedia: [4marks]
i Audio
ii Images
- b Explain the term “Digital multimedia” [2marks]
- c State the two types of multimedia streaming [2marks]
- d Describe MIDI file formatting technique [4marks]
- e Explain the difference between the following terms: [8marks]
i “Lossy compression” and “Lossless compression”
ii “JPEG” and “MPEG”
- f Give a definition of a Multimedia Authoring System. [2marks]
- g Explain why a multimedia application requires a large amount of storage space? [4marks]
- h What are the key characteristics of a Multimedia System? [4marks]

SECTION B ANSWER ANY TWO QUESTIONS (40 MARKS)

Question two 20 marks

- a) Explain the term “Synchronization”. [2marks]
- b) Explain the following synchronization issues: [4marks]
i) Spatial Relations
ii) Temporal Relations
- c) Explain any **two** classifications of multimedia file systems [4marks]
- d) Explain any **four** major functions of multimedia operating systems. [4marks]
- e) State any **three** characteristics of good user interface [6marks]

Question three 20 marks

- a Describe the following video encoding Techniques [4marks]
- b Differentiate between Run-length Encoding and Huffman coding [6marks]
- c Using Run-length Encoding, compress the following sequence of symbol [2marks]
‘AHHHCCCBBBEEEE’
- d Write short notes on Real Audio and real video multimedia file compression and show their differences [6marks]
- e Explain any two classifications of multimedia file systems [2marks]

Question four 20 marks

- a) What is multimedia system [2marks]
- b) What are the few technical challenges with multimedia information technology? [2marks]
- c) What is the meaning of multimedia application [2marks]
- d) What is Hypertext and Hypermedia? [4marks]
- e) Explain applications of multimedia in any four areas [4marks]
- f) State and explain **three** technology incentives that support multimedia [6marks]

Question five 20 marks

- a What is meant by the terms static media and dynamic media? Give examples of each type of media. [4marks]
- b Why is file or data compression necessary for Multimedia activities? [2marks]
- c What are the major factors that need to be considered when considering what storage requirements are necessary for Multimedia Systems? [4marks]
- d Give a definition of Virtual Reality. [2marks]
- e Briefly outline the **four** broad classes of approach that one may exploit to compress multimedia data. Do not detail any specific compression algorithms. [8marks]