THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

CERTIFICATE IN INFORMATION TECHNOLOGY (CIT 2K 11M)

EIT 1130: MULTIMEDIA SYSTEMS

END OF SEMESTER EXAMINATIONS

SERIES: DECEMBER 2011

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) Define the term multimedia?   [2marks]

b) Explain why a multimedia application requires a large amount of storage space?   [4marks]

c) What are the key characteristics of a Multimedia System?   [4marks]

d) What is multimedia system   [2marks]

e) What are the few technical challenges with multimedia information technology?   [2marks]

f) What is the meaning of multimedia application   [2marks]

g) What is Hypertext and Hypermedia?   [4marks]

h) Explain applications of multimedia in any four areas   [4marks]

i) State and explain **three** technology incentives that support multimedia   [6marks]

SECTION B (ANSWER ANY TWO QUESTIONS)

Question two 15 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) Give a definition of Virtual Reality.   [1marks]

d) Briefly outline the **four** broad classes of approach that one may exploit to compress multimedia data. Do not detail any specific compression algorithms.   [8marks]

Question three 15 marks

a) Give a definition of a Multimedia Authoring System.   [2marks]

b) Briefly describe **four** ways in which content can be formatted and delivered in a Multimedia Authoring System.   [8marks]

c) What issues of functionality need to be provided in order to effectively use a wide variety of media in Multimedia applications. Your answer should briefly address how such functionality can facilitate in general Multimedia applications.   [5marks]

Question four 15 marks

a) With suitable examples, explain the following elements of multimedia:[4marks]
   i.   Audio
   ii. Images

b) Explain the term "Digital multimedia   [2marks]

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c) Describe MIDI file formatting technique [3marks]

d) Explain the difference between the following terms: [6marks]

      i.   "Lossy compression" and "Lossless compression"

      ii.   "JPEG" and "MPEG

Question five 15 marks

a) Differentiate between Run-length Encoding and Huffman coding [6marks]

b) Using Run-length Encoding, compress the following sequence of symbol [1marks]

    'AAAACBBBBB'

c) Write short notes on Real Audio and real video multimedia file compression and show their differences [6marks]

d) Explain any **two** classifications of multimedia file systems [2marks]