



**TECHNICAL UNIVERSITY OF MOMBASA**  
**INSTITUTE OF COMPUTING AND INFORMATICS**

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Select department

**UNIVERSITY EXAMINATION FOR:**  
**BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**  
**ICS 2303: MULTIMEDIA SYSTEMS**  
**END OF SEMESTER EXAMINATION**

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE: 1 May 2016**

**Instructions to Candidates**

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other **TWO** questions.

**Do not write on the question paper.**

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**Question ONE**

a) Explain the applications of multimedia in the following areas:

i) Video Teleconferencing

ii) Edutainment and Infotainment

iii) Advertising and Purchasing

iv) Digital Library

(8 Marks)

b) Explain the difference between the following terms:

i) “Lossy compression” and “Lossless compression” techniques

ii) “JPEG” and “MPEG” standards

iii) Intra-object synchronization and Inter-object synchronization

iv) Hypertext and Hypermedia

v) Virtual reality and virtual environment (20 Marks)

c) Explain the term “In-sync” as used in synchronisation (2 Marks)

### **Question TWO**

b) Describe any four types of multimedia building blocks, stating an example of a suitable application software in each case. (12 Marks)

b) State any four technological advancements that are driving multimedia revolution. (4 Marks)

d) Explain the following terms:

i) Multimedia system

ii) Multimedia Information system (4 Marks)

### **Question THREE**

a) Explain any four reasons of compressing a file. (8 Marks)

b) There are two major components of a three-dimensional virtual reality: movement and stereoscopy. Explain these two components. (4 Marks)

c) Describe any four types of virtual realities. (8 Marks)

### **Question FOUR**

a) Explain the following terms as used in digital video editing:

i) Rendering

ii) Lip synchronization (4 Marks)

b) Explain any four types of hybrid data compression techniques (8 Marks)

c) Explain any four Technological Aspects that are driving the multimedia advancements (4 Marks)

d) State any four ways digital compression is achieved. (4 Marks)

### **Question FIVE**

a) Describe the following virtual reality components:

i) Input devices

(2 Marks)

ii) Output devices

(2 Marks)

b) A multimedia information system (MIS) architecture consists of the eight sub-systems. Describe these sub-systems (16 Marks)