

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2014/2015

**FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

**ICS 2303/HBT 2304 : MULTIMEDIA SYSTEMS**

**DATE: APRIL 2015 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND**

**ANY OTHER TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Define the following terms:

1. Multimedia. [2 marks]
2. Multimedia system. [2 marks]
3. Multimedia authoring. [2 marks]
4. Morphing. [2 marks]
5. Animation. [2 marks]

(b) Discuss any five desirable features of a multimedia system.

[5 marks]

(c) Differentiate between multimedia authoring and multimedia programming and name two applications used to achieve these tasks. [4 marks]

(d) CPU scheduling is key to ensuring QoS (Quality of Service) in multimedia systems. Examine four CPU scheduling strategies.

[4 marks]

(e) State and explain two categories of computer animation. [4 marks]

(f) Explain the following processes that are involved in producing 3D animations:

1. Storyboard. [1 mark]
2. Modeling. [1 mark]
3. Mapping. [1 mark]

**QUESTION TWO (20 MARKS)**

(a) Define the following sound attributes:

1. Sound amplitude. [2 marks]
2. Sampling. [2 marks]
3. Analog sound. [2 marks]
4. Digital sound. [2 marks]
5. Audio conversion. [2 marks]

(b) Discuss five factors that must be considered when sampling and using audio. [10 marks]

**QUESTION THREE (20 MARKS)**

(a) Examine five common types of digital audio formats. [5 marks]

(b) Explain any five factors that determine the file size of digital video.

[5 marks]

(c) Define compression as used in multimedia and differential between lossless compression and lossy compression. [5 marks]

(d) With the aid of a diagram, explain the difference between intraframe compression and interframe compression. [5 marks]

**QUESTION FOUR (20 MARKS)**

(a) Discuss any five current trends in multimedia systems. [10 marks]

(b) Examine five usage areas of multimedia systems. [10 marks]

**QUESTION FIVE (20 MARKS)**

(a) Differentiate between vector graphics and bitmap graphics and explain two advantages and two disadvantages of each category.

[10 marks]

(b) (i) Write a php script to upload an image called image.Speg to

MySQL database. [5 marks]

(ii) Write a HTML code to display the image saved above on a web page. [5 marks]