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MAIN EXAMINATION

JANUARY – APRIL 2018 TRIMESTER

FACULTY OF SCIENCE

DEPARTMENT OF LIBRARY AND INFORMATION SCIENCE

EVENING PROGRAMME

LIS 318: MULTIMEDIA SYSTEMS

Date: APRIL 2018	**Duration: 2 Hours**
INSTRUCTIONS: Answer Question ONE and ANY OTHER TWO Questions	

Q1. a) What is meant by the terms Multimedia and Hypermedia? Distinguish between these two concepts. **(2 marks)**

b) What is meant by the terms static media and dynamic media? Give examples of each type of media. **(4 marks)**

c) Why is file or data compression necessary for Multimedia activities? **(4 marks)**

d) Briefly explain how the Discrete Cosine Transform Operates, and why is it so important in data compression in Multimedia applications **(4 marks)**

e) What are the major factors when considering storage requirements for Multimedia Systems? **(4 marks)**

f) What is RAID technology and what advantages does it offer as a medium for the storage and delivery of large data? **(4 marks)**

g) Briefly explain how entropy coding and transform coding techniques work for data compression, clearly identifying the differences between them. Illustrate your answer with a simple example of each type of encoding. **(4 marks)**

h) Briefly describe four hardware and software features that a Multimedia System should possess. **(4 marks)**

Q2. a) What are the key distinctions between multimedia data and more conventional types of media? **(4 marks)**

b) Describe four major factors that affect the Quality of Service of a multimedia application? **(8 marks)**

c) Briefly outline the basic principles of Inter-Frame Coding in Video Compression **(8 marks)**

Q3. a) What key issues or problems does a multimedia system have to deal with when handling multimedia data? **(4 marks)**

b) Why is integration of multimedia data a potential problem for multimedia systems? Briefly how are these problems addressed in such systems? **(8 marks)**

c) Briefly describe the four basic types of data redundancy that data compression algorithms can apply to audio, image and video signals. **(8 marks)**

Q4. a) What is the distinction between lossless and lossy compression? **(4 marks)**

b) Briefly explain what Multimedia Authoring paradigms exist? Describe each paradigm briefly **(8 marks)**

c) Briefly describe four ways in which content can be formatted and delivered in a Multimedia Authoring System **(8 marks)**

Q5. a) Using examples, define the following terms as used in images
i) Pel
ii) Depth
iii) VGA **(6 marks)**

b) Compare and contrast the following terms
i) Dithering and anti-aliasing
ii) Color Palette and Gornut
iii) Image and graphics **(6 marks)**

c) A bitmap image has a resolution of 640 by 480 pixels. Each pixel is 24-bit deep. What is the size of the bitmap in bytes? **(6 marks)**

d) List four methods of acquiring digital images. **(2 marks)**

END