



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: CIT891
COURSE TITLE: ADVANCED MULTIMEDIA TECHNOLOGY

Time: 2½ hours

Instruction: Answer any five questions each question carries 14 marks

- 1(a) Write short notes on JPEG. (4 marks)
- (b) List and briefly explain the four modes defined by JPEG. (8 marks)
- (c) Which of the JPEG modes provide(s) lossy compression? (1½ marks)
- (d) Name the commonly used algorithm for image compression in the sequential DCT-based mode. (½ mark)
- 2(a) In the context of image processing, what do you understand by the term "Morphology"? (2 marks)
- b) What are the basic operations that constitute morphology? State the relationship between them. (3 marks)
- c) Briefly describe any three subclasses of image processing (9 marks)
- 3a) Briefly describe the types of pictures defined by MPEG. (6 marks)
- b) Briefly describe different types of home television distribution standards. How are they different? (8 marks)
- 4a) What is Multimedia System? (2 marks)
- b) What is image enhancement? (3 marks)
- c) What are the various approaches to image enhancement? (6 marks)
- d) What is Audio Subsystem (3 marks)
- 5a) Write short notes on the following:
 - i) Discrete Cosine Transform (DCT) (5 marks)
 - ii) Discrete Fourier Transform (DFT) (5 marks)
- b) Enumerate the properties of the two dimensional Fourier transform (4 marks)
- 6a) In your own words, explain the following terms

- i) Luminance ii) Chrominance (6 marks)
- b) State four advantages and four disadvantages of compression? (8 marks)
- 7a) Discuss extensively on the usual ways of storing captured images in digital forms, (12 marks)
- b) State the Nyquist theorem (2 marks)