NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SCIENCES

Course Code: CIT 891 ***Time:*** 2½ hrs
Course Title: Advanced Multimedia Technology
***Course Credit Unit*:** 3

Instruction: Answer Question 1 (22 marks) and any four questions (12 Marks each

1a) Describe briefly any three (3) home television distribution standards (9 marks)

1b) List five (5) desirable features for a typical Multimedia Computer ***(5 marks)***

1c) Define the following terms:
(i) Multimedia System ***(4 marks)***
(ii) Morphology in image processing (4)

2a) Describe briefly the Run-length Encoding technique (4 marks)

2b) Given the following binary image, use Run Length Encoding scheme to encode each of them ***(6 marks)***

1 1 1 0 0 0
0 1 1 1 1 1
1 1 1 1 0 1
0 0 1 1 1 1
1 1 0 0 0 0
1 0 0 0 0 1

c) State major advantage and disadvantage of Run Length Encoding algorithm (2 marks)

3a) Explain the three (3) types of text that are processed by a multimedia computer . ***(6 marks)***

3b) Mention three of the challenges facing multimedia systems. ***(3 marks)***

3c) Describe the Binary format procedure of storing captured images in digital forms (3 marks)

4a) List three advantages of video compression (3 marks)

4b) List three disadvantages of video compression (3 marks)

4c) Explain multi-level coding process for JPEG compression (**6 marks**)

5(a) Describe image enhancement and image restoration methods of image processing. ***(6 marks)***

5(b) Define and list four examples of multimedia applications (**4 marks**)

5(c) What does image segmentation refer to? (2 marks)

6(a) **Identify three** advantages of data compression **(**3 marks)

6(b) List and briefly explain the four modes defined by JPEG (**6 marks**)

6c) **List** three drawbacks of data compression **(**3 marks)

7(a) Write a short note on JPEG. ***(4 marks)***

7(b) Explain Discrete Fourier Transform (4 marks)

7c) Describe briefly Discrete Cosine Transform **(4 marks)**