NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, Plot 91, Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi, Abuja

FACULTY OF SCIENCES

JULY 2017 EXAMINATION

Course Code: CIT 891 ***Time:*** 2½ hrs
Course Title: Advanced Multimedia Technology
***Course Credit Unit*:** 3
Instruction: Answer Question One (1) and other any four (4) questions.

QUESTIONS

1 a) State and write short notes on any two home television distribution standards. How are they different? (11 marks)

b) State any three desirable Features for a Multimedia Computer ***(3 marks)***

c) Write short note on run-length encoding. (**5 marks**)

d) Using run length encoding, encode the following binary image ***(3 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

2 a) Write short notes on each of the following: ***(10 marks)***

i) Discrete Cosine Transform (DCT)
ii) Discrete Fourier Transform (DFT)

b) Define multimedia workstation? ***(2 marks)***

3 a) A method of encoding is to encode each row as a list of pairs of numbers; the first number in each pair gives the starting position of a run of 1's and the second number its length. Using this method, give the binary image of the code below:
(33) (1241) (1361)(25)(15)(2252) (6 marks)

b) What are the advantages and disadvantages of compression? **(**6 marks)

4 a) List and explain the properties of the two dimensional Fourier transform ***(4 marks)***

b) Differentiate between lossy and lossless compression? (4 marks)

c) State the limitations of Pattern Matching. (4 marks)

5 List and describe the subclasses of image processing ***(12 marks)***

6 a) Write short notes on the three types of text that are processed by a multimedia computer ***(9 marks)***

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