

**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

***Course Code:*** CIT 891 ***Time:*** 2½ hrs

***Course Title:*** Advanced Multimedia Technology

***Course Credit Unit*:** 3

***Instruction:*** Answer any five (5) questions. Each question carries 14 marks

1) Discuss each of the following:

a) Predictive Coding ***(5 marks)***

b) Vector quantization (VQ) ***(5 marks)***

c) Transform coding ***(4 marks)***

2a) State any four secondary advantages of data compression ***(4 marks)***

b) Briefly describe the following:

i) Signal Encoders ***(3 marks)***

ii) Signal Decoder ***(3 marks)***

c) Briefly describe Median Filtering ***(4 marks)***

3a) Write short notes on the following:

(i) Salt and pepper noise ***(2½ marks)***

(ii) Periodic noise ***(2 marks)***

(iii) Gaussian noise ***(3½ marks)***

(iv)Speckle noise ***(2½ marks)***

b) With the aid of illustrative diagram, briefly describe a typical Data Compression Model ***(3½ marks)***

4a) State the reasons for multimedia compression. ***(2 marks)***

b) Discuss each of the following:

i) Huffman coding ***(4 marks)***

ii) Fractal compression ***(4 marks)***

iii) Discrete-time Fourier transform (DTFT) ***(4 marks)***

5a) Briefly describe Wavelet coding ***(4 marks)***

b) (i) State the usual ways of storing captured images in digital forms ***(3 marks)***

(ii) Write short note on any two of them, ***(5 marks)***

6a) State and write short notes on the various home television distribution standards. How are they different? ***(10 marks)***

b) What are the challenges facing multimedia systems. ***(2 marks)***

c) State the desirable features for a Multimedia Computer ***(2 marks)***

7a) List and briefly describe the forms in which audio subsystem is represented ***(7 marks)***

b) Briefly describe any two subclasses of image processing. ***(7 marks)***