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)*