



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA**  
**FACULTY OF COMPUTING**  
**DEPARTMENT OF COMPUTER SCIENCE**

**2025\_2 EXAMINATIONS**

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**COURSE CODE:** CIT 891

**COURSE TITLE:** ADVANCED MULTIMEDIA TECHNOLOGIES

**CREDIT UNITS:** 3 Units

**TIME ALLOWED:** 3 HOURS

**INSTRUCTION:** ANSWER QUESTION 1 AND ANY OTHER THREE QUESTIONS

**Question One**

Q1a) State the fundamental concept behind Subband Coding (SBC). **(3marks)**

Q1b) The eye is a visual system that makes use of certain colour source properties, briefly describe these properties. **(5marks)**

Q1c) Mention four(4) challenges currently confronting multimedia system. **(4marks)**

Q1d) Give a comprehensive analysis of image processing? **(4marks)**

Q1e) State four elements of multimedia. **(5marks)**

Q1f) Using appropriate example, evaluate the Nyquist's theorem. **(4marks)**

**Question Two**

Q2a) Write short note on the following:

i. spatial redundancy

ii. Statistical redundancy reduction. **(4marks)**

Q2b) Explain in details the Principles of Digitization. **(6marks)**

Q2c) Differentiate between lossy and lossless compression? **(5marks)**

**Question Three**

Q3a) Write short note of run length-encoding. **(4mark)**

Q3b) Differential between Huffman coding and run length-encoding. **(3marks)**

Q3c) State and briefly describe the task involved in image processing. **(8marks)**

**Question Four**

Q4a) List and discuss the types of texts that are processed by multimedia. **(6marks)**

Q4b) Using a well labelled diagram discuss the decoder design. **(9marks)**

**Question Five**

Q5a) Explain how Vector Quantization works? **(5marks)**

Q5b) Briefly discuss any five (5) Digital Video formats. **(10marks)**

**Question Six**

Q6a) List and explain three main properties of a colour source that the eye makes properties of a colour source that the eye makes. **(6marks)**

Q6b) State the three experiments statements results from histograms. **(3mark)**

Q6c) Write short notes on any two

i. RGB

ii. YIQ

iii. HSV **(6marks)**