NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION

DEPARTMENT OF TECHNICAL AND ENGINEERING EDUCATION AND TRAINING

ANALOGUE COMMUNICATION PTE 2250

First Semester Examination

NOVEMBER 2024

This examination paper consists of 3 pages

Time allowed: 3 hours   **Total Marks: 100**

Special requirements: NONE   **Examiner's name: Mrs D. Chasokela**

INSTRUCTIONS

1. The paper consists of 3 printed pages with 6 questions.
2. Each question carries 20 marks.
3. Answer any 5 questions.

MARK ALLOCATION

QUESTION	MARKS
1.	20
2.	20
3.	20
4.	20
5.	20
6.	20
TOTAL	100

Question 1

a) Explain the parts of a communication system.   [10 marks]

b) Define the following communication terminology   [10 marks]

   i) Modulation ii) Digital signal iii) Amplitude iv) Modulation

v) Carrier signal vi)

Modulating signal vii)

Signal-to-Noise Ratio

viii) Mixer ix)

Multiplexing

x) Digital communication

Question 2

a) State any five advantages of implementing modulation in the communication systems.

[10 marks]

b) Differentiate message or modulating signal, carrier signal and modulated signal. [10 marks]

Question 3

a) Sketch the baseband signal, carrier signal and AM modulated wave.   [10 marks]

b) Compare the three modulations PWM, PPM, and PFM   [10 marks]

Question 4

Define the MUX and DEMUX and draw the 4:1 MUX; 6:1 MUX and 1:8 DEMUX; 1:16
DEMUX.   [20 marks]

Question 5

a) State any 5 applications for each of the following modulations:
i) Phase Modulation   [5 marks]
ii) Pulse Modulation   [5 marks]
b) Differentiate internal noise from external noise and give four examples for each.
                                                                            [10 marks]

Question 6

a) State five requirements for receiving and demodulation for both AM and FM receivers.

[10 marks]

b) Differentiate AM from FM.

[10 marks]