

SIR ARTHUR LEWIS COMMUNITY COLLEGE  
DIVISION OF TECHNICAL EDUCATION AND MANAGEMENT STUDIES

**EXAMINATION SESSION** : Second Semester Final Exams  
**TUTOR** : Lindsley Philbert  
**PROGRAMME CODE** : 3EE ESC-AD  
**COURSE TITLE** : Communication Principles with Application  
**COURSE CODE** : ELE 209  
**CLASSES** : Electronics Engineering YR 2  
**DATE** :  
**COMMENCEMENT TIME** :  
**DURATION** : 2 1/2 Hours  
**INVIGILATORS** :  
**ROOM** :

#  
C37



**INSTRUCTIONS**

Answer any 4 question. If time permit you can do other questions

Questions should be properly labeled.

Use Diagrams to help with your description



- 1a Define the terms as used in telecommunication:
- |                      |               |                |        |
|----------------------|---------------|----------------|--------|
| i. Transmission Line | iii. CAT5     | v. Return Loss |        |
| ii. Attenuation      | iv. Crosstalk |                | (5mks) |
- b. List 3 types of transmission Lines and briefly describe each. (3mks)
- c. With suitable diagrams explain the concepts of
- |                      |                     |        |
|----------------------|---------------------|--------|
| i. Balance lines and | ii. Unbalance lines | (6mks) |
|----------------------|---------------------|--------|
- d. List 4 factors that affect transmission line loss and briefly discuss how each factor affects the transmission line. (6mks)
- 2a. Use suitable diagram and discuss the concept of Characteristics Impedance in transmission lines. (7mks)
- b. A coaxial cable has a capacitance of 29.5pF/ft and inductance of 73.7nH/ft. Determine its characteristics impedance for 1ft. (4mks)
- c. Determine the wavelength of a 100MHz signal in free space traveling through a transmission line. (4mks)
- d. A customer desires the use of a transmission line to carry a signal 100MHz. The transmitter is installed 200ft from the antenna in a area prone to lightning. Choose a suitable Transmission line and justify your choice. (5mks)
- 3a Define the terms below:
- |                      |                  |                         |        |
|----------------------|------------------|-------------------------|--------|
| i. Transducer        | ii. Polarization | iii. Radio Interference |        |
| iii. Isotropic point | v. ghosting      |                         | (5mks) |
- b. Briefly describe the terms diffraction and Refraction (4mks)
- c. List 3 methods of wave propagation and describe each. Use diagrams where appropriate to help with your answer. (12mks)
- 4a. Discuss the three types of television Systems, NTSC, PAL and SECAM. Compare and give one advantage and one disadvantage of each. (14mks)
- b. Explain the rationale of moving from analog Television to Digital television (6mks)
- 5a. Compare LCD, Plasma and CRT in terms of cost, viewing angle, resolution and screen size. (12mks)
- A customer is desirous of purchasing a Television. The options available are LCD and Plasma screens. Enlighten the customer as the choice he can make and why. (6mks)

6 Define the following terms

i. uplink

ii. Down link

iii. LNB

iv. Parabola dish

(4mks)

Design a **Duplex** communication system using Satellite technology that allows DBS Television to transmit data from St.Lucia to England. Use block diagrams to illustrate.

(16mks)

End of Examination