**GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY**
Faculty of Engineering

BSc in Electronic and Telecommunication Engineering Degree
Semester 2 Examination – November 2022

**ET 1202 – INTRODUCTION TO TELECOMMUNICATION**

Time allowed: 2 hours                                   30th November 2022

**INSTRUCTIONS TO CANDIDATES**

This paper contains 4 questions on 1 page

Answer all FOUR questions and each Question carriers equal marks

This is a closed book examination

This examination accounts for 70% of the module assessment. A total maximum mark obtainable is 100. The marks assigned for each question and parts thereof are indicated in square brackets

If you have any doubt as to the interpretation of the wordings of a question, make your own decision, but clearly state it on the script
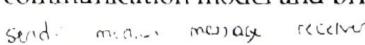
Assume reasonable values for any data not given in or provided with the question paper, clearly make such assumptions made in the script

All examinations are conducted under the rules and regulations of the KDU

## Question 1

a) What are differences among unicast, multicast and broadcast information transmission schemes? (3 marks)

b) Compare the OSI reference model and TCP/IP reference model (8 marks)

c) Briefly explain the functions of transport layer, network layer and data link layer. (5 marks)

d) Explain the basic principle of the fiber optical communication and what are the advantages over the coaxial cable-based communication? (5 marks)

e) What is the difference between ARQ and HARQ schemes? (4 marks)

## Question 2

a) Draw a block diagram of the communication model and briefly explain the basic function of each block. (6 marks)

b) What are advantages of digital communication? (4 marks)

c) Explain why a sensor is important in communication system with appropriate examples? (5 marks)

d) What is the difference between Time Division Duplex (TDD) and Frequency Division Duplex (FDD). Justify the answer using proper examples. (4 marks)

e) Briefly explain the difference between packet switching and circuit switching modes of communication. (6 marks)

## Question 3

a) Explain Vestigial Sideband Modulation (VSB) and its applications. (5 marks)

b) What is Pulse Code Modulation (PCM) and briefly explain (8 marks)

c) Discuss the advantage of Delta Modulation (DM) over Differential Pulse Code Modulation (DPCM)? (6 marks)

d) Briefly explain the Amplitude Shift Keying (ASK) and Phase Shift Keying (PSK) using appropriate diagrams (6 marks)

## Question 4

a) Discuss the advantages and disadvantages of terrestrial and satellite microwave communication systems. (5 marks)

b) Explain, basic multiplexing schemes and their applications. (5 marks)

c) Compare the differences between LAN, WAN and MAN networks (5 marks)

d) What is DSL over Internet and briefly explain? (5 marks)

e) Briefly explain how delay, jitter and packet loss can influence the VoIP, Video and Internet browsing. (5 marks)

--------------- End of question paper ------------------