

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034



B.Sc./B.C.A. DEGREE EXAMINATION – COMPUTER SCIENCE/COMPUTER APPLICATIONS

FIFTH SEMESTER – NOVEMBER 2022

UCS 5604/UCA 5601 – DATA COMMUNICATION AND NETWORKS

Date: 30-11-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A

(10 x 2 = 20 Marks)

Q. No

Answer ALL the Questions

- 1 Give any two real time examples for Data Communication.
- 2 Write any two major differences between LAN and MAN.
- 3 Define Composite signal.
- 4 What is Bandwidth?
- 5 What is Line Coding?
- 6 Define Bit rate and Baud rate.
- 7 What is Demultiplexing?
- 8 Mention the types of Propagation modes.
- 9 What is the purpose of Block Coding?
- 10 Define and classify errors.

PART – B

(5 x 8 = 40 Marks)

Answer ALL the Questions

- 11 (a) What is Network topology? Explain the different categories of Network topology.
(Or)
(b) Describe the various types of data flow directions with a neat diagram.
- 12 (a) Compare Analog and Digital signals.
(Or)
(b) Explain the causes of Transmission impairment.
- 13 (a) Write short notes on Pulse Code Modulation.
(Or)
(b) Explain the categories of Analog-to-Analog modulation.
- 14 (a) Explain the concept of Time Division Multiplexing.
(Or)
(b) Discuss about Shielded Twisted Pair and Unshielded Twisted Pair.
- 15 (a) Write short notes on the following:
i) Types of addresses ii) Nodes iii) Framing
(Or)
(b) Discuss about Address Resolution Protocol.

Answer any TWO Questions

- 16 (a) Explain the functionalities of the Data Link Layer, Transport Layer and Session Layer in the OSI reference model with a neat diagram. (12)
- (b) Explain the following Network Devices: (8)
- i) Router ii) Switch iii) Hub iv) Repeater.
- 17 (a) Assume a data stream is made up of three 0s followed by two 1s followed by two 0s. Encode this stream using the following schemes. (10)
- i) NRZ-L ii) NRZ-I iii) RZ iv) Manchester
- iv) Differential Manchester.
- (b) Elaborate about the different types of UnGuided media with its pros and cons. (10)
- 18 (a) List out the Error Detection techniques and explain any two techniques in detail with examples. (10)
- (b) Explain in detail about Serial transmission mode. (10)

@@@@@