

**2022**

*Time : 3 hours*

*Full Marks : 80*

*The figures in the right-hand margin indicate marks.*

*Answer **all** questions.*

1. (a) ✓ What are the basic components of broadband communication systems ? 4
- (b) ✓ Explain the basic cable broadband data network architecture. 4
- (c) ✓ What is Extranet ? Represent the configuration of Extranet. 8

**OR**

- (a) Explain about LAN, WAN and MAN network architecture. 8
- (b) What do you mean by internetworking ? Explain the features of it. 4
- (c) Write down the benefits of intranet. 4

- ✓ 2. (a) What are the various security threats on an Intranet and what are the techniques used to conquer the threat ? 8
- (b) Explain about ISDN devices. 8

**OR**

- (a) Represent the relationship between the degree of a node in Intranet and the rank of the node ? Determine the degree of node 5 in the intranet if the rank of the node is 4 and the power is 3. 4
- (b) Write down the applications of Intranet and Extranet. 8
- (c) Explain about the reference points specified by ISDN. 4

- ✓ 3. (a) Explain the Layer-1 and Layer-2 of ISDN. 8
- (b) What are the basic elements of ATM network ? represent the ATM network. 4
- (c) Define capacity and spectral efficiency of a cellular network. 4

**OR**

(a) Represent the BISDN Protocol reference model and explain the architecture. 8

(b) Define a VPN. List out the types of VPN are there. 4

(c) Write down the features of Cellular Digital Packet Data (CDPD). 4

4. (a) Explain about the three major hardware components in cellular network. 6

(b) Write down the differences between external cable model and internal cable modem. 4

(c) How does a cable model work ? 6

OR

(a) Explain the following features of cellular communication : Frequency reuse, cell splitting, handoff. 8

(b) Represent and explain various components in the network architecture of CDPD. 8

5. (a) Write down the features and applications of Wi-Max. 6

- (b) Explain a typical wireless ATM network architecture. 6
- (c) What are the major advantages and disadvantages of X.25. 4

OR

- (a) What are the challenges facing wireless ATM networks ? 4
- (b) Describe the functions of each of the three X.25 layers. 6
- (c) Write down the applications of Frame relay. 6

