

3659

4

(iii) If a network needs **200 hosts**, which subnet mask is suitable?

(iv) Find number of hosts in/26.

(b) Explain the concept of VLAN and its advantages in a LAN environment. 7

7. (a) Describe the functions of the Transport Layer in detail. 8

(b) Explain the role of FTP and Remote Logging in the Application Layer. 7

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3659

L

Unique Paper Code : 6202452403

Name of the Paper : Data communication and Networks

Name of the Course : **B.Voe Software Development**

Semester : 4

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. The paper has **two** sections. **Section A** is compulsory. Each question is of **5** marks.
3. Attempt any **four** questions from **Section B**. Each question is of **15** marks.

Section A

1. (a) Explain the benefits of using computer networks in communication and data sharing. 5

(200)

P.T.O.

3659

2

- (b) Explain the advantages of Client-Server architecture over Peer-to-Peer networks. 5
- (c) Describe network topologies and their various types. 5
- (d) Define the given networking terms: Telnet, SMTP, HTTP, HTTPS, and FTP. 5
- (e) Define TCP/IP Model with a suitable figure. 5
- (f) Explain the functions of networking devices such as bridges, repeaters, gateways, and ADSL modems.

Section B

- 2. (a) Explain Half-Duplex and Full-Duplex Ethernet and discuss their differences. 8
- (b) Describe the working of Ethernet at the Data Link Layer. 7

3659

3

- 3. (a) Explain the significance of OSI model in network communication. Describe the working of all the layers. 7
- (b) Compare the OSI and TCP/IP models, highlighting their basic functions. 8
- 4. (a) Explain layer-2 LAN switching and the learning process of a switch. 8
- (b) Explain network loops and how Spanning Tree Protocol prevents broadcast storms. 7
- 5. (a) Explain the working of a wireless LAN. Discuss the various types of WLAN. 7
- (b) Compare IPv4 and IPv6 addressing schemes and explain the benefits of IPv6. 8
- 6. (a) Answer the following : 8
 - (i) If a network needs **50 hosts**, what will be the subnet mask ?
 - (ii) If a network needs **100 hosts**, what is the CIDR notation?

P.T.O.