Total No. of Printed Pages—12

HS/XII/V/CT/Paper–V/13

2 0 1 3

COMPUTER TECHNIQUE

(Vocational Stream)

Paper : V

(Computer Network)

(Theory)

Full Marks : 100

Time : 3 hours

The figures in the margin indicate full marks for the questions

General Instructions :

(i) Write all the answers in the Answer Script.

(ii) Attempt Part—A (Objective Questions) serially.

(iii) Attempt all parts of a question together at one place.

(PART : A—OBJECTIVE)

(*Marks* : 50)

SECTION—I

(*Marks* : 35)

1. Fill in the blanks with appropriate words/phrases : 1×20=20

(a) When two or more machines can share their resources we can term them as ——.

(b) The most successful LAN technology is the ——.

(c) A LAN may also require the use of —— to boost the transmission signal.

(d) All LANs that use wires as the physical transmission media require the client machine to have ——.

(e) The cable interface sometimes uses a —— to send and receive signals on a small network.

(f) The bus topology usually uses —— to transmit signal in a network.

(g) —— usually pass only those messages that are for nodes on the other LANs.

(h) The 'network of networks' is ——.

(i) —— device converts the analog signal to digital signal and vice versa.

(j) Mobility is one of the advantages of —— LAN.

(k) A —— is a larger transmission line that carries data gathered from smaller lines that interconnect with it.

(l) Every machine in a network has a unique ——.

(m) The tree topology is equivalent to —— topology.

(n) The most popular Google is a ——.

(o) Technically Telnet is ——.

(p) —— is the primary method of transferring files over the Internet.

(q) 'Mosaic' is an example of ——.

(r) For each element in HTML, a set of possible —— is defined.

(s) In general, booting may be of —— types.

(t) A fibre-optic cable transmits —— rather than electronic signals eliminating the problem of electronic interference.

2. State whether the following statements are *True* or *False* : ½×20=10

(a) Routers are usually used in MAN.

(b) A Protocol is a set of rules that governs the communications between computers on a network.

(c) In a linear bus topology the entire network will run if there is a break in the main cable.

(d) A workstation controls the communication of information between the nodes on a network.

(e) In a hub, a frame is passed along a 'broadcast' to everyone of its port.

(f) 'network.node.node.node' is a class A network.

(g) A gateway is used between networks with different protocols.

(h) The example of a geographic domain is .gov.

(i) When we press Ctrl + Alt + Del, it is called warm boot.

(j) Firewall prevents the network from intruders.

(k) A router translates information from one network to another.

(l) Telnet is an operating system.

(m) Usually all HTML programs run in Internet Explorer.

(n) Netscape Navigator is a popular search engine.

(o) Intranet can be used in a building.

(p) Gopher is a File Transfer Protocol.

(q) The acronym of VSAT is Very Small Earthly Aperture Terminal.

(r) A file virus is very difficult to remove from the system.

(s) TCP/IP is a suite of Internet Protocol.

(t) The extension of HTML program is .htm.

3. Choose and write the correct answer : 1×5=5

(a) Which kind of network should we create when we need to link together various branch offices around the State for a company?

(i) LAN

(ii) WAN

(iii) MAN

(iv) All of the above

(b) We are building a Windows NT server network with Microsoft proxy server connected to the Internet. Which Protocol must be bound on the network interface card going to the Internet?

(i) NetBEUI

(ii) NWLink

(iii) TCP/IP

(iv) IP

(c) Which device's purpose is to connect two network segments so that the overall length may be longer than the maximum for a single segment?

(i) Hub

(ii) Router

(iii) Repeater

(iv) Network adapter

(d) Which address must be unique on each NIC of our network?

(i) Subnet mask

(ii) MAC address

(iii) Transceiver setting

(iv) Frame type

(e) We plan to link the servers in our campus network with a 1.2 Gbps backbone. Which type of media is required to support this data rate?

(i) UTP

(ii) STP

(iii) Coaxial

(iv) Fibre-optic

SECTION—II

(*Marks* : 15)

4. Write short notes on the following in not more than *4* to *5* sentences each (any *five*) : 3×5=15

(a) ARPANET

(b) ISP

(c) Passive hub

(d) Modem

(e) NIC

(f) Workstations

(g) Browser

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

Answer *any* **two** from each Section

SECTION—I

(Network Technologies)

5. *(a)* What is a network? Explain each kind of network with example. 6

(b) What are the advantages of network? 3

6. *(a)* What is a private network? Explain with example. 4

(b) Explain the advantages and disadvantages of star and ring topologies. 5

7. Write notes on the following (any *two*) : 4½×2=9

(a) Analog transmission

(b) Digital transmission

(c) Multiplexing

8. *(a)* What is a file server? Explain its functions. 2+2=4

(b) Explain the types of LAN cable with example. 5

SECTION—II

(Network Environment)

9. *(a)* Explain the booting sequence. 6

(b) What is MBR (Master Boot Record)? Explain. 3

10. *(a)* What is workstation in a network? Explain. 4

(b) What are the major steps to install workstation in a network? Explain. 5

11. *(a)* What is a security in a network? 3

(b) What are the reasons that we want to set up a security system on a LAN? Explain. 6

12. *(a)* What is a remote login? Explain. 4

(b) What is subnet mask? Explain. 5

SECTION—III

(Network Application)

13. Write short notes on the following : 3½+3½=7

(a) Facsimile

(b) E-mail

14. Explain the function of TCP and IP. What is 'Archie' in TCP/IP? 4+3=7

15. *(a)* What is a Web browser? Explain with example.

(b) What is a Telnet? Explain. 3½+3½=7

16. *(a)* What is an Intranet? Explain.

(b) What is newsgroup? Explain. 3½+3½=7

★★★