HS-XII-V-CT-Paper–V-25

2 0 2 5

COMPUTER TECHNIQUE

(Vocational Stream)

(Computer Network)

(Theory)

Paper : V

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)

1. Fill in the blanks from the list of words/phrases given below :   1×20=20

 (a) A computer _____ consists of two or more interconnected computers.

(b) A general term to describe the transmission of massages by the use of computing systems and telecommunication facilities is referred to as _____.

(c) A device that enables two networks to exchange data is called a _____.

(d) ____ connects computers and smaller networks to a larger network over greater geographic areas.

(e) ____ is the process of sending messages through switches such that they reach their destinations in an efficient way.

(f) ____ is one network often need access to computers resources in another network or another part of a WAN.

(g) A ____ is a device that provides a Central Connection point for cables from workstations, servers and peripherals.

(h) ____ refers to the arrangement of different elements like nodes, links and devices in a Computer Network.

(i) A ____ topology is another non-hierarchical structure where each network node directly connects to all others.

(j) In a ____ topology, data packets travel in a closed loop from one device to the next device until they reach their destination.

(k) ____ is the device to connect two network segments so that the overall length may be longer than the maximum for a single segment.

(l) For a computer to be connected to a LAN, the computer must have a card known as the _____.

(m) In a star topology, the Central Computer that has everything routed through it is called a/an ____ computer.

(n) An Ethernet uses _____ topology.

(o) A modem is a device that ____ computers output into a form that can be accepted for transmission over many existing telephone lines.

(p) ____ data transmission is the method of transmitting and receiving data simultaneously over a communication path.

(q) Multiplexers and remote _____ may perform the same function.

(r) A _____ is a set of rules that controls the data communications.

(s) The physical address assigned by NIC manufacturer is called _____ address.

(t) The Central Computer which is powerful than other computer in the network is called ____.

List of Words / Phrases

Entry	Mesh	Network	TCP/IP
MAC	Server	Full duplex	Bus
Concentrator	e-mail	Bridge	Ring
Repeater	Packet switching	NIC	RJ 45
PAN	Half-duplex	Topology	Workstation
IP address	Converts	Exit	WAN

(4)

2. State whether the following statements are *True* or *False* :

1×10=10

   (a) A client is the computer that asks for the action in a network.

   (b) Big networks can be of peer-to-peer types.

   (c) MAC address is a 48-bit address.

   (d) The star topology ensures that the network will work even when a node fails.

   (e) A router can be replaced with a bridge.

   (f) A hub broadcasts the received signal to all its connected devices.

   (g) Every object on the Internet has a unique URL.

   (h) A gateway is like a modem.

   (i) An amplifier and a repeater do the same thing.

   (j) A standalone computer may also be referred to as host.

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

(a) What is a standalone computer?

 (i) A computer that is not connected to a network

 (ii) A computer that is being used as a server

 (iii) A computer that does not have any peripherals attached to it.

 (iv) A computer that is used by only one person

(b) In a peer-to-peer network, each computer in a network is referred to as

 (i) server

 (ii) client

 (iii) peer

 (iv) sender

(c) Which transmission media is capable of having much higher bandwidth (data capacity)?

 (i) Co-axial

 (ii) Twisted-pair cable

 (iii) Untwisted cable

 (iv) Fiber-optic

(d) Which of the following components is internal to a computer and is required to connect the computer to a network?

 (i) Wireless Access Point

 (ii) Network Interface Card

 (iii) Switch

 (iv) Hub

(e) A repeater takes a weak and corrupted signal and ____ it.

   (i) amplifies

   (ii) regenerates

   (iii) resembles

   (iv) reroutes

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

(a) MAN

(b) Hybrid topology

(c) Analog transmission

(d) Active hub

(e) Booting

(f) Firewall

(g) Intranet

(h) Web browser

(i) Baud

(**7**)

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

Answer any *two* questions from each Section

SECTION—I

(Network Technologies)

5. *(a)* What are the purposes of using a router? Explain. 4

   (b) What is a bridge? Why is it needed? 5

6. *(a)* What are the factors that must be considered before making a choice for the topologies? 5

   (b) What is meant by topology? Name some popular topologies. 4

7. Give two advantages and two disadvantages of the following network topologies : 4+5=9

   (a) Star topology

   (b) Bus topology

8. *(a)* Briefly explain the File Transfer Protocol. 4

   (b) What is the purpose of using a gateway in the context of networking? 5

SECTION—II

(Network Environment)

9. *(a)* What is TCP/IP? Explain its functions. 5

   (b) What is HTTP? What is its role in networking? 4

10. *(a)* What are guided and unguided media? Explain with example.   6

     (b) What is GSM?   3

11. *(a)* What is CDMA? Explain.   5

     (b) What is GPRS? Explain.   4

12. *(a)* What is VoIP? Explain.   4

     (b) Explain WWW in brief. Mention its attributes.   5

SECTION—III

(Networking Application)

13. Write short notes on the following :   4+3=7

     (a) Telnet

     (b) URL

14. *(a)* Explain Class—A and Class—B IP address.   4

     (b) What is addressing in Internet? Explain.   3

15. *(a)* What is HTML? What are the empty tag and container tag? Explain.   5

     (b) What is a Web Browser?   2

16. *(a)* What is a 'Mosaic'? Explain.   3

     (b) What is the difference between a private network and a public network?   4

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