HS/XII/V/CT/Paper–V/20

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COMPUTER TECHNIQUE

(Vocational Stream)

(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)

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

   (a)   Two or more machines (computer) connected and shared their resources is commonly known as _____.

   (b)   A broadcast address enables a message to go to several groups of _____.

(c) To connect two similar LAN's, we use the device called a(n) _____.

(d) A computer network that directly connects computer separated by long distance is called a(n) _____.

(e) In a star topology, the central computer that has everything routed through it is called a(n) _____ computer.

(f) Ethernet uses _____ topology.

(g) Baud is a unit of _____ transmission speed.

(h) A set of standards for communication is called a(n) _____.

(i) A modem is a device that _____ computer output into a form that can be accepted for transmission over many existing telephone lines.

(j) One of the hardware components needed to create a LAN is called a(n) _____: this can be either a twisted-pair cable or a fibre-optic cable.

(k) The pieces of information that are sent over the Internet are called _____.

(l) The operating system most commonly associated with the Internet is _____.

(m) Each computer connected to the Internet is known as a(n) _____.

(3)

(n) The network of networks that connects computers all around the world is called the _____.

(o) An IP address is a _____ bit number.

(p) Using the Internet to send a written message to another Internet user is called _____.

(q) The World Wide Web document that a business can use to communicate with its customers is also called a(n) _____.

(r) In _____ communication, data can be transferred simultaneously in both directions.

(s) Narrowband transmission channel offers _____ transmission speeds than broadband channels.

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

List of phrases/words :

network cable	hub	full-duplex	protocol
converts	bus	workstation	node
entry	WAN	measuring	slower
bridge	network	host	MAN
UNIX	web site	Windows	15
Internet	packets	switch	e-mail
router	16	LAN	faster

(**4**)

2. State whether the following statements are *True* or *False* : 1×10=10

(a) Domain names are easy to remember than IP addresses.

(b) When loading TCP/IP on a workstation, we are actually locating to the IP protocol suite.

(c) TCP/IP is one protocol.

(d) SPX is a connection-oriented protocol.

(e) Geographic domains are usually of **.edu** pattern.

(f) For class A addresses the first byte of the address represents the networks and the last three bytes represent the host.

(g) A dial-up connection is more reliable than a direct connection.

(h) Firewall prevents the network from intruders.

(i) A fibre-optic cable may transmit pulses of laser light in all digital networks.

(j) Router is usually used in MAN.

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

(a) Computer network is

   (i) the collection of hardware components and computers

   (ii) interconnected by communication channels

   (iii) sharing of resources and information

   (iv) All of the above

(5)

(b) A data highway is a good description of which 'network topology'?

   (i) A bus

   (ii) A star

   (iii) A ring

   (iv) A token ring

(c) Which of the following ISO levels is more closely related to the physical communication facilities?

   (i) Application

   (ii) Session

   (iii) Network

   (iv) Data link

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

   (i) LAN

   (ii) WAN

   (iii) MAN

   (iv) CAN

(e) Which of the following is not a commonly used network architecture?

   (i) Ring

   (ii) Star

   (iii) Candle

   (iv) Multi-drop

                      [P.T.O.

(6)

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

(a) TCP/IP

(b) MODEM

(c) Switch

(d) Hackers

(e) Node

(f) Front-end

(g) Router

(h) Browser

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

Answer any **two** questions from each section

SECTION—I

(Network Technologies)

5. *(a)* Differentiate between simplex, half-duplex and full-duplex modes of data transmission.   6

(b) What is a 'value-added network'? Explain.   3

6. *(a)* Describe the contents of a typical synchronous data transmission frame. How are these frames used to transmit data?   6

(b) What are the different types of network? Explain.   3

(7)

7. *(a)* What is a 'switch'? Why is it used in a network? Explain.   5

    (b) What is a 'file server'? Explain its functions.   4

8. *(a)* Write a short note on 'digital transmission'.   5

    (b) Explain about multiplexing by the common carriers.   4

SECTION—II

(Network Environment)

9. *(a)* What is a firewall? Explain its advantages in a network.   5

    (b) What is a multi-user operating system? Explain with example.   4

10. *(a)* What are communication protocols? Why are communication protocols required in creating network?   5

    (b) What is booting? What are the types of booting? Explain.   4

11. *(a)* Write a short note on 'remote access service'.   5

    (b) What are cookies? What are its types? Explain.   4

12. *(a)* What is serial data transmission? What is parallel data transmission? Explain.   5

    (b) Write a short note on V-SAT.   4

(8)

SECTION—III

(Network Application)

13. *(a)* What is a facsimile? Explain.   3

    (b) Write short notes on the following :   2+2=4
      (i) Gopher
      (ii) Archie

14. *(a)* Write a short note on the 'Intranet'.   3

    (b) What is a 'Mosaic'? Explain.   4

15. What are the technologies introduced by the development of 'World Wide Web'? Explain.   7

16. *(a)* What is a TELNET? Explain in brief.   4

    (b) What is an Internet Explorer in Windows? Explain.   3

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