

Total No. of Printed Pages—8

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 ____.

(2)

- (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

(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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