

Total No. of Printed Pages—8

HS/XII/V/CT/Paper-V/22

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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 from the list of words/phrases given at the end : 1×20=20

- (a) Central computer which is powerful than other computer in the network is called ____.
- (b) In peer-to-peer network, each computer in a network is referred to as ____.

(2)

- (c) A repeater takes a weak and corrupted signal and _____ it.
- (d) A computer network that spans a relatively large geographical area is called _____.
- (e) LAN stands for _____.
- (f) Wired networks use an access method called _____.
- (g) _____ is a protocol that allows to send/upload email message from local computer to an email server.
- (h) A network of networks is known as _____.
- (i) In a network, a machine is identified by unique address called _____.
- (j) The physical address assigned by NIC manufacturer is called _____ address.
- (k) _____ is a network of physical object embedded with electronics, software, sensors and network connectivity.
- (l) The _____ is the protocol used to make hypertext document readable on the WWW.
- (m) We can amplify the signal using _____.
- (n) _____ is the technique of changing the characteristics of the signal being transmitted so that it carries data on it.

(3)

- (o) The table maintains by routers for routing purposes, is called ____ table.
- (p) Some of data bits calculated from digital data so as to ensure data integrity is called ____.
- (q) Each computer connected to the Internet is known as a/an ____.
- (r) ____ is a device converts the analog signals and vice-versa.
- (s) The Mozilla Firefox is a popular ____.
- (t) A ____ is a set of rules that governs the communications between computers on a network.

List of phrases/words :

CSMA/CD	SMTP	IP address	NIC
MAC	TCP/IP	regenerates	Modulation
WAN	Local Area Network	HTTP	LAN
Internet	Server	IoT	CSMA/CA
Modem	Routing	Node	Web Browser
Hub	Data Packet	Intranet	peer
Checksum	Repeater	EDI	mail

(4)

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

- (a) A stand-alone computer may also be referred to as host.
- (b) A computer is identified by 64-bit IP address.
- (c) A client is the computer that asks for the action in a network.
- (d) Every object on the Internet has unique URL.
- (e) A switch can work in place of a hub.
- (f) The cloud is a generic term used for Internet.
- (g) TCP is a connection-oriented protocol.
- (h) CSMA/CD can be used by wireless network.
- (i) An octet is an 8-bit binary number.
- (j) Router is usually used in MAN.

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

- (a) Protocols are
 - (i) agreements on how communication components and devices are to communicate
 - (ii) logical communication channels for transferring data
 - (iii) physical communication channels used for transferring data
 - (iv) None of the above

(5)

(b) Traditionally, Internet checksum is

- (i) 8-bit
- (ii) 16-bit
- (iii) 24-bit
- (iv) 32-bit

(c) A firewall is

- (i) an established network performance reference point
- (ii) a software or hardware used to secure/guard a private network from a public network
- (iii) a virus that infects macros
- (iv) a pre-defined encryption by user to encrypt and decrypt data transmission

(d) What is the address size of IPv4?

- (i) 32 bits
- (ii) 64 bits
- (iii) 128 bits
- (iv) 256 bits

(e) For wireless networks, which protocol is used for handling collisions?

- (i) CSMA
- (ii) CSMA/CD
- (iii) CSMA/CA
- (iv) All of the above

(6)

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

- (a) Switch
- (b) Repeater
- (c) Ping command
- (d) Hybrid topology
- (e) Hackers
- (f) Gateway
- (g) Internet

(PART : B—DESCRIPTIVE)

(Marks : 50)

Answer any **two** questions from each Section

SECTION—I

(**Network Technologies**)

5. (a) What is a network? Why is it needed? 2+4=6
- (b) What are the purposes of using a router? 3
6. (a) What are the major types of network? Explain. 6
- (b) What is NIC? 3

(7)

7. Write short notes on the following (any *two*) : $4\frac{1}{2} \times 2 = 9$
- (a) Guided media
 - (b) Topology
 - (c) Fiber optic
8. (a) What is a collision in a network? Explain. 5
- (b) What is a file server? Explain its functions. 4

SECTION—II

(**Network Environment**)

9. (a) What is multi-user operating system? Explain with example. $4\frac{1}{2}$
- (b) What is booting? What are the types of booting? Explain. $4\frac{1}{2}$
10. (a) What are the differences between IPv4 address and IPv6 address? 6
- (b) What is IP address? Explain. 3
11. (a) What is a Domain Name Resolution or (DNS)? Explain. 5
- (b) Write a short note on V-SAT. 4
12. (a) What is File Transfer Protocol? Explain. 5
- (b) What is SMTP? Explain. 4

(8)

SECTION—III

(Network Application)

13. (a) What is a 'mosaic'? Explain. 4
(b) What is e-mail? Explain. 3
14. Write short notes on the following : $3\frac{1}{2}+3\frac{1}{2}=7$
(a) Gopher
(b) Archie
15. (a) What are HTTP and HTML? Explain their importance in accessing Internet. 5
(b) What is a webpage? 2
16. (a) What is the difference between a private network and a public network? 4
(b) What is 'error detection' in network? Mention the types of 'error'. $2+1=3$

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