

No. of Printed Pages : 8

A9.3-R5.1 : NETWORK MANAGEMENT

DURATION : 03 Hours

MAXIMUM MARKS : 100

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| OMR Sheet No. : | | | | | |
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Answer Sheet No. :

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Name of Candidate : _____ ; Signature of Candidate : _____

INSTRUCTIONS FOR CANDIDATES :

- Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
- Question Paper is in English language. Candidate has to answer in English language only.
- There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
- **PART ONE** is Objective type and carries **40** Marks. **PART TWO** is Subjective type and carries **60** Marks.
- **PART ONE** is to be answered in the **OMR ANSWER SHEET** only, supplied with the question paper, as per the instructions contained therein. **PART ONE** is **NOT** to be answered in the answer book for **PART TWO**.
- Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer book for **PART TWO** will be supplied at the table when the Answer Sheet for **PART ONE** is returned. However, Candidates who complete **PART ONE** earlier than one hour, can collect the answer book for **PART TWO** immediately after handing over the Answer Sheet for **PART ONE** to the Invigilator.
- **Candidate cannot leave the examination hall/room without signing on the attendance sheet and handing over his/her Answer Sheet to the invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.**
- After receiving the instruction to open the booklet and before answering the questions, the candidate should ensure that the Question Booklet is complete in all respects.

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

PART-ONE

(Answer all Questions. Each question carries ONE mark)

- 1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein.**

(1x10)

- 1.1** The first Network was called _____

(A) CNNET
(B) NSFNET
(C) ASAPNET
(D) ARPANET

- 1.2** IPv4 Address Format is a ___ bits Address.

(A) 8 bits
(B) 16 bits
(C) 32 bits
(D) 64 bits

- 1.3** An analog signal has a bit rate of 6000 bps and a baud rate of 2000 baud. How many data elements are carried by each signal element?

(A) 0.336 bits/ baud
(B) 3 bits/ baud
(C) 120 bits/ baud
(D) None of the above

- 1.4** A bridge has access toaddress in the same network.

(A) Physical
(B) Network
(C) Data link
(D) Application

- 1.5** When data and acknowledgement are sent in the same frame, this is called as

(A) Piggypacking
(B) Piggybacking
(C) Backpacking
(D) Goodpacking

- 1.6** Encryption and Decryption is the responsibility of Layer.

(A) Physical
(B) Network
(C) Application
(D) Data link

- 1.7** Which of the following address is used to deliver a message to the correct application program running on a host?

(A) Port
(B) IP
(C) Logical
(D) Physical

- 1.8** Hub is a term used with

(A) Star Network
(B) Ring Network
(C) Router
(D) Bridge

- 1.9** The baud rate is

(A) always equal to the bit transfer rate
(B) equal to twice the bandwidth of an ideal channel
(C) not equal to the signaling rate
(D) equal to half of the bandwidth of an ideal channel

- 1.10** The period of a signal of frequency 24 Hz is

(A) 2 x 24 seconds
(B) 1/24 seconds
(C) 24x24 seconds
(D) 24/2 seconds

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

2.1 Default port number for HTTPS is 80.

2.2 UTP is the cheapest cabling choice.

2.3 When using the 1-persistent CSMA technique, if the medium is busy, the station continues to listen until the channel is sensed idle and then transmits immediately.

2.4 ICMP (Internet Control Message Protocol) helps IP to report some problems when routing a packet.

2.5 SCTP and IGMP work on same layer of TCP/IP protocol suite.

2.6 In a star topology, a single connection failure will halt all traffic between all sites.

2.7 1G uses digital signals for communication.

2.8 Count-to-infinity problem occur in link state algorithms.

2.9 Ring and bus topologies are used in LANs.

2.10 SIM stands for subscriber identity mode

3. Match words and phrases in column X with the closest related meaning / words(s) / phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

| X | | Y | |
|------|------------------|---|---------------------------|
| 3.1 | Class A | A | Data Link Layer |
| 3.2 | IMAP | B | Router |
| 3.3 | Error control | C | Unreliable |
| 3.4 | Shortest Path | D | Client-Server |
| 3.5 | Optical Fiber | E | $n(n-1)/2$ |
| 3.6 | CRC | F | Physical Layer |
| 3.7 | Mesh topology | G | 93.125.56.230 |
| 3.8 | ARP | H | Light |
| 3.9 | UDP | I | Handshake |
| 3.10 | FTP architecture | J | Cyclic Redundancy Check |
| | | K | Reliable |
| | | L | IP address to MAC Address |
| | | M | Application Layer |

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choos the most appropriate option, enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.

(1x10)

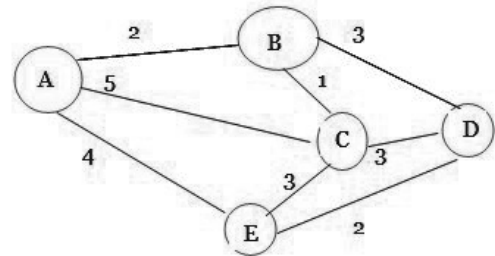
| | | | | | | | |
|----------|------------------------|----------|-----------------|----------|-------------------------|----------|-------------------|
| A | 1 | B | Data link Layer | C | Analog to Digital | D | Gateway |
| E | 32 | F | TCP | G | 48 | H | Telnet |
| I | Network Interface Card | J | HTTP | K | Unidirectional Antennas | L | Digital to Analog |
| M | 128 | | | | | | |

- 4.1 _____ is connection oriented transport layer protocol.
- 4.2 Port 23 is used in ____ ____.
- 4.3 Window size at receiver end in Go-back-N protocol is _____.
- 4.4 Physical address is of _____ bits which are represented in hexadecimal form.
- 4.5 PCM (Pulse Code Modulation) is an example of _____ modulation.
- 4.6 Microwaves need _____ that send out signals in one direction.
- 4.7 A node on a network that acts as a doorway to or from another network is called _____.
- 4.8 A network device that provides a hardware interface between a computer and a network so that computers can communicate over the network is called a _____.
- 4.9 An IPv6 address consists of ____ bits
- 4.10 Error correction and detection techniques are used in _____.

PART TWO
(Answer any FOUR Questions)

5. (a) Differentiate between TCP and UDP.
 (b) What is flow control? Explain pushing and pulling.
 (c) A bit stream 10011101 is to be transmitted using the standard CRC method. The generator bits are 1001. What is the actual bit string transmitted?
(5+4+6)
6. (a) What is Nyquist Theorem for noiseless channel? Explain Shannon capacity for noisy channel.
 (b) Explain the following terms:
 (i) Routing
 (ii) Forwarding
 (c) A signal travels from point A to point B. At point A, the signal power is 100 W. At point B, the power is 10 W. What is the attenuation in decibels?
(7+4+4)
7. (a) What do you mean by transmission impairment? Explain each of them in brief.
 (b) Explain the terms: Transmission Delay, Propagation Delay and Queuing Delay
 (c) Explain about proxy server.
(6+6+3)
8. (a) What are the types of www documents? Explain them.
 (b) Explain the difference between following multiplexing techniques:
 (i) Frequency Division Multiplexing (FDM)
 (ii) Time Division Multiplexing (TDM).
(8+7)

9. (a) Using Dijkstra's shortest path algorithm, find the route from **Router A to Router D** given the following configuration. Show the working steps.



- (b) A network has the IPv4 address 134.40.0.0.
 (i) What class does the IP address belong to?
 (ii) Identify its subnet mask. How many hosts can this network support before subnetting.
(8+7)

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SPACE FOR ROUGH WORK

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