A9.3-R5 : NETWORK MANAGEMENT

DURATION : 03 Hours   **MAXIMUM MARKS : 100**

OMR Sheet No. :

Roll No. :   **Answer Sheet No. :**

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 respect.

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

PART ONE

(Answer all the 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 _____ is the physical path over which a message travels.
(A) Path
(B) Medium
(C) Protocol
(D) Route

1.2 A set of rules that governs data communication :
(A) Protocols
(B) Standards
(C) RFCs
(D) None of the mentioned

1.3 Which layer links the network support layers and user support layers ?
(A) session layer
(B) data link layer
(C) transport layer
(D) network layer

1.4 TCP/IP model was developed _____ the OSI model.
(A) prior to
(B) after
(C) simultaneous to
(D) none of the mentioned

1.5 For a _____ channel, we need to use the Shannon capacity to find the maximum bit rate.
(A) noiseless
(B) noisy
(C) low-pass
(D) bandpass

1.6 Which one of the following is the multiple access protocol for channel access control ?
(A) CSMA/CD
(B) CSMA/CA
(C) Both CSMA/CD & CSMA/CA
(D) None of the mentioned

1.7 HTTP client requests by establishing a _____ connection to a particular port on the server.
(A) User datagram protocol
(B) Transmission control protocol
(C) Broader gateway protocol
(D) None of the mentioned

1.8 Two broad categories of congestion control are :
(A) Open-loop and Closed-loop
(B) Open-control and Closed-control
(C) Active control and Passive control
(D) None of the mentioned

1.9 This layer is an addition to OSI model when compared with TCP/IP model :
(A) Application layer
(B) Presentation layer
(C) Session layer
(D) Both Session and Presentation layer

1.10 Transport layer aggregates data from different applications into a single stream before passing it to _____.
(A) network layer
(B) data link layer
(C) application layer
(D) physical layer

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 Size of TCP segment header ranges between 20 and 60 bytes.

2.2 Discarding policy is mainly done by the receiver.

2.3 Mostly time division multiplexing is used in wireless LAN.

2.4 In Network Management System, the division that is responsible for controlling access to network based on a predefined policy is called Security Management.

2.5 User datagram protocol is called connectionless because all UDP packets are treated independently by transport layer.

2.6 A node is a TCP name for a transport service access point.

2.7 Automatic repeat request error management mechanism is provided by logical link control sub layer.

2.8 The main advantage of UDP is low overhead.

2.9 Retransmission of packets must not be done when Packet is error-free.

2.10 In sliding window method of flow control, the receiver window decreases in size when an ACK is sent.

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	Router	**A.**	Common connection point for devices in a network
3.2	Local Telephone system	**B.**	Internet Control Message Protocol
3.3	OSI	**C.**	Performance decreases with increase in delay
3.4	Transport layer	**D.**	Stop-n-Wait
3.5	Congestion Control	**E.**	Open System Interconnection
3.6	Data link layer	**F.**	Process-to-process communication
3.7	SNMP	**G.**	User Datagram Protocol
3.8	Hub	**H.**	Connect multiple networks and forward packets
3.9	UDP	**I.**	Simple Network Management Protocol
3.10	ICMP	**J.**	Example of guided media
		K.	Host to host communication
		L.	Common protocol for receiving e-mails
		M.	Orthogonal frequency division multiplexing

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

(1x10)

A.	255	B.	Session layer	C.	8	D.	Back pressure
E.	Half duplex	F.	Application	G.	Topology	H.	Socket
I.	Data link	J.	Segment	K.	Transport layer	L.	Full duplex
M.	16						

4.1 Computer data transmission mode in which data can flow in both directions but not at same time is called _____.

4.2 Physical or logical arrangement of network is known as _____.

4.3 The _____ layer provides the services to user.

4.4 In OSI model, when data is sent from device A to device B, the 5th layer to receive data at B is _____.

4.5 The entire hostname has a maximum of _____ characters.

4.6 An endpoint of an inter-process communication flow across a computer network is called _____.

4.7 TCP groups a number of bytes together into a packet called _____.

4.8 The header size of UDP packet is _____ bytes.

4.9 Flow control is mainly a function of the _____ layer.

4.10 The technique in which a congested node stops receiving data from the immediate upstream node or nodes is called as _____.

PART TWO

(Answer any FOUR questions)

5. (a) List the types of topologies and explain any two of them.

   (b) With a neat diagram explain the IPv4 header in detail.

   (c) Mention the merits and demerits of layered architecture.

   (4+8+3)

6. (a) What do you mean by Transmission Impairments ? List and explain all of them.

   (b) List the basic functions of Data Link Layer and explain the Stop and Wait protocol along with a diagram.

   (c) Differentiate between congestion control and flow control.

   (4+8+3)

7. (a) Define spread spectrum. List all the techniques and explain Frequency Hopping Spread Spectrum.

   (b) Explain the SNMP protocol along with a diagram.

   (c) Differentiate between circuit switching and packet switching.

   (4+8+3)

8. (a) Differentiate between OSI and TCP/IP model.

   (b) Draw and explain the UDP header in detail.

   (c) Mention the techniques to improve QoS.

   (4+8+3)

9. (a) List the unicast routing protocols and explain Link State Routing Protocol.

   (b) Explain the different types of networking devices.

   (c) Differentiate between connectionless and connection oriented services.

   (4+8+3)

   - o 0 o -

SPACE FOR ROUGH WORK