A9.3-R5 : NETWORK MANAGEMENT

अवधि : 03 घंटे
DURATION : 03 Hours

अधिकतम अंक : 100
MAXIMUM MARKS : 100

ओएमआर शीट सं. :
OMR Sheet No. :

रोल नं. :
Roll No. :

उत्तर-पुस्तिका सं. :
Answer Sheet No. :

परीक्षार्थी का नाम :
Name of Candidate : _____

परीक्षार्थी के हस्ताक्षर :
Signature of Candidate : _____

परीक्षार्थियों के लिए निर्देश :	Instructions for Candidate :
कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यानपूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर दे सकता है।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के **दो भाग** हैं। **भाग एक** में **चार** प्रश्न और **भाग दो** में **पाँच** प्रश्न हैं।	There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
भाग एक ''वैकल्पिक'' प्रकार का है जिसके कुल अंक 40 है तथा **भाग दो** ''व्यक्तिपरक'' प्रकार का है और इसके कुल अंक 60 है।	**PART ONE** is Objective type and carries 40 Marks. **PART TWO** is Subjective type and carries 60 Marks.
भाग एक के उत्तर, **ओएमआर उत्तर-पुस्तिका** पर ही दिये जाने हैं। **भाग दो** की उत्तर-पुस्तिका में **भाग एक** के उत्तर **नहीं** दिये जाने चाहिए।	**PART ONE** is to be answered in the **OMR ANSWER SHEET** only. **PART ONE** is **NOT** to be answered in the answer book for **PART TWO**.
भाग एक के लिए अधिकतम समय सीमा **एक घण्टा** निर्धारित की गई है। **भाग दो** की उत्तर-पुस्तिका, **भाग एक** की उत्तर-पुस्तिका जमा कराने के पश्चात् दी जाएगी। तथापि, निर्धारित एक घंटे से पहले **भाग एक** पूरा करने वाले परीक्षार्थी **भाग एक** की उत्तर-पुस्तिका निरीक्षक को सौंपने के तुरंत बाद, **भाग दो** की उत्तर-पुस्तिका ले सकते हैं।	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.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल/कमरा नहीं छोड़ सकते हैं। ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अयोग्य घोषित कर दिया जाएगा।	**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.**
प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात् एवं उत्तर लिखना आरम्भ करने से पहले उम्मीदवार जाँच कर यह सुनिश्चित कर लें कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before starting to answer the questions, the candidate should ensure that the Question Booklet is complete in all respect.

जब तक आपसे कहा न जाए, तब तक प्रश्न-पुस्तिका न खोलें।
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 Which one of the following task is not done by data link layer ?

(A) Framing

(B) Error control

(C) Flow control

(D) Channel coding

1.2 Which one of the following is a data link protocol ?

(A) Ethernet

(B) Point-to-point protocol

(C) HDLC

(D) All of the mentioned

1.3 _____ has the highest transmission speed in a network.

(A) Coaxial cable

(B) Twisted pair cable

(C) Optical fiber cable

(D) Electrical cable

1.4 The physical layer translates logical communication requests from the _____ into hardware specific operations.

(A) Data link layer

(B) Network layer

(C) Transport layer

(D) Application layer

1.5 Which one of the following is not a function of network layer ?

(A) Routing

(B) Inter-Networking

(C) Congestion control

(D) None of the mentioned

1.6 The _____ translates internet domain and host names to IP address.

(A) Domain name system

(B) Routing information protocol

(C) Network time protocol

(D) Internet relay chat

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1.7 _____ delivers/stores mail to receiver server.

(A) Simple mail transfer protocol

(B) Post office protocol

(C) Internet mail access protocol

(D) Hypertext transfer protocol

1.8 When displaying a web page, the application layer uses the _____.

(A) HTTP protocol

(B) FTP protocol

(C) SMTP protocol

(D) None of the mentioned

1.9 The sharing of a medium and its link by two or more devices is called _____.

(A) Full Duplexing

(B) Multiplexing

(C) Both (A) and (B)

(D) None of the options

1.10 Three or more devices share a link in _____ connection.

(A) Unipoint

(B) Multipoint

(C) Point-to-point

(D) None of the options

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 LAN type of network is used for small geographical area such as in a one building.

2.2 Hubs regenerate electrical signals, which are specified at the Data Link layer.

2.3 Routers provide packet switching, packet filtering, internetwork communication and path selection.

2.4 The main advantage of a layered model is that it can allow application developers to change aspects of a program in just one layer of the layer model's specifications.

2.5 Classful routing means that all hosts in the internetwork use the different mask.

2.6 Physical or logical arrangement of network is called routing.

2.7 Transport layer protocols deals with application to application communication.

2.8 The technical specification of Ethernet is IEEE 802.3 standard.

2.9 Network layer provides data routing paths for network communications.

2.10 Protocols are Logical communication channels for transferring data.

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

	Column X		Column Y
3.1	Ping Command	A.	Resource Sharing
3.2	File Server	B.	File Transfer
3.3	Physical Layer	C.	SMTP
3.4	Transport Layer	D.	Routers
3.5	FTP	E.	Full duplex
3.6	Two way traffic	F.	Electromagnetic signals
3.7	Application Layer	G.	Unreliable Protocol
3.8	Email	H.	Network Connectivity
3.9	Network Layer	I.	Switch
3.10	UDP	J.	End to end delivery
		K.	HTTP
		L.	Optical Fiber
		M.	Radio signals

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.	DHCP	B.	Star topology	C.	Port	D.	End system
E.	IP	F.	Optical fiber	G.	Data link layer	H.	Bus topology
I.	MAC	J.	Session layer	K.	Physical layer	L.	End to end
M.	PCM						

4.1 Transport layer is implemented in _____.

4.2 _____ has the highest transmission speed in a network.

4.3 The physical layer translates logical communication requests from the _____ into hardware specific operations.

4.4 The data link layer takes the packets from _____ and encapsulates them into frames for transmission.

4.5 Delimiting and synchronization of data exchange is provided by _____.

4.6 _____ assigns IP address to the client connected in the internet.

4.7 In _____, there is a central controller or hub.

4.8 _____ requires multipoint connection.

4.9 Application layer offers _____ service.

4.10 To deliver a message to the correct application program running on a host, the _____ address must be specified.

PART TWO

(Answer any FOUR questions)

5. (a) What are the applications of Computer Networks ?

(b) What is OSI Model ? Explain the functions, protocols and services of each layer.

(c) Explain about the different types of Transmission medias in computer networks. **(5+5+5)**

6. (a) Explain about Sliding Window Protocols.

(b) Explain the following :

(i) TCP (ii) UDP

(c) Explain about the Carrier Sense Multiple Access Protocols. **(4+5+6)**

7. (a) Explain about the wireless LAN (IEEE802.11).

(b) What are the Network layer design issues ? **(7+8)**

8. (a) Explain about the IP Version 4 Protocol.

(b) Differentiate between CSMA/CA and CSMA/CD mechanism. **(7+8)**

9. (a) Explain the TCP/IP reference model with neat diagram.

(b) Explain the difference between following multiplexing techniques :

(i) Frequency Division Multiplexing (FDM)

(ii) Time Division Multiplexing (TDM) **(8+7)**

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