

G-2/227/21

Roll No.

M.Sc. II Semester Examination, 2021**INFORMATION TECHNOLOGY****Paper III****(Computer Networking and Data Communication)**

Time : 3 Hours]

[Max. Marks : 100

Note : All questions are compulsory. Question Paper comprises of 3 sections. Section A is objective type/multiple choice questions with no internal choice. Section B is short answer type with internal choice. Section C is long answer type with internal choice.

SECTION A**1×10=10****(Objective Type Questions)****Note :** Attempt all questions.

1. Hierarchy of the layer as the data packet moves from the upper to the lower layers, headers are :
 (a) Modified (b) Removed
 (c) Rearranged (d) Added
2. The physical path over which a message travels from one end to another is called
 (a) Path (b) Route
 (c) Protocol (d) Medium

P.T.O.

3. Which of the following layers in an addition to OSI model when compared with TCP IP model ?
 (a) Session and Presentation layer
 (b) Presentation layer
 (c) Session layer
 (d) Application layer
4. In the IPv4 addressing format, the number of networks allowed under Class C addresses is :
 (a) 2^{14} (b) 2^7
 (c) 2^{21} (d) 2^{24}
5. Delimiting and synchronization of data exchange is provided by
 (a) Application layer (b) Session layer
 (c) Transport layer (d) Link layer
6. Which type of Ethernet framing is used for TCP/IP and DEC net ?
 (a) Ethernet 802.3 (b) Ethernet 802.2
 (c) Ethernet II (d) Ethernet SNAP
7. When a DNS server accepts and uses incorrect information from a host that has no authority giving that information, then it is called :
 (a) DNS lookup (b) DNS hijacking
 (c) DNS spoofing (d) None of the mentioned

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8. Which NetWare protocol provides link-state routing ?

- (a) RIP (b) NLSP
(c) SAP (d) NCP

9. In virtual circuit network each packet contains :

- (a) full source and destination address
(b) a short VC number
(c) only source address
(d) only destination address

10. WPA2 is used for security in :

- (a) ethernet (b) bluetooth
(c) wi-fi (d) none of the mentioned

SECTION B **6×5=30**

(Short Answer Type Questions)

Note : Answer the following questions in maximum 250 words.

Unit-I

1. What is meant by Data Communication ?
Explain its characteristics.

Or

Discuss the role of standard organization.

Unit-II

2. Explain how full-duplex data transmission takes place on a RS-232 DTE-DCE interface.

Or

Write short notes on analog and digital data transmission.

Unit-III

3. Explain two problems in 802.11 MAC sublayer protocol.

Or

Describe the CSMA/CD mechanism with example.

Unit-IV

4. Enumerate in detail about the two way and three-way handshaking.

Or

Write short notes on congestion control in ATM.

Unit-V

5. What is network security ? Write the aspect of network security.

Or

Compare ATM and Frame relay.

SECTION C**12×5=60****(Long Answer Type Questions)**

Note : Answer in following questions in maximum 250 words.

Unit-I

1. Explain in detail TCP/IP reference model.

Or

During the communication, how various layers of OSI model exchange information to establish a connection ? Describe with the help of a suitable diagram.

Unit-II

2. What is multiplexing ? Why multiplexing is required ? What are the differences between upward multiplexing and downward multiplexing.

Or

Write short notes on various types of transmission media, highlighting their merits and demerits.

Unit-III

3. What is the purpose of subnetting ? Explain the various subnet mask.

Or

Explain why the efficiency of pure ALOHA is half of slotted ALOHA.

Unit-IV

4. What are the techniques to improve Quality of Services (QoS) in network ? Explain with example.

Or

Discuss briefly about architecture and services of email using RFC-822 and MIME.

Unit-V

5. Explain the message authentication operation using RSA algorithm.

Or

Write short notes on symmetric-key cryptography.

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