Printed Page:- 03 **Subject Code:- ACSBS0602**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: VI - THEORY EXAMINATION (2023 - 2024)

Subject: Computer Networks

Time: 3 Hours **Max. Marks: 100**

General Instructions:

IMP: *Verify that you have received the question paper with the correct course, code, branch etc.*

1. *This Question paper comprises of* ***three Sections -A, B, & C.*** *It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.*

2. *Maximum marks for each question are indicated on right -hand side of each question.*

3. *Illustrate your answers with neat sketches wherever necessary.*

4. *Assume suitable data if necessary.*

5. *Preferably, write the answers in sequential order.*

6. *No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.*

SECTION-A 20

1. Attempt all parts:-

1-a. Who developed standards for the OSI reference model? (CO1) 1

(a) ANSI - American National Standards Institute

(b) ISO - International Standards Organization

(c) IEEE - Institute of Electrical and Electronics Engineers

(d) ACM - Association for Computing Machinery

1-b. _____ LAN topology describes the possible connections between pairs of networked end-points that can communicate. (CO1) 1

(a) Complex

(b) Physical

(c) Logical

(d) Incremental

1-c. In TDM, the transmission rate of a multiplexed path is always _____ the sum of the transmission rates of the signal sources. (CO2) 1

(a) Greater than

(b) Lesser than

(c) Equal to

(d) Equal to or greater than

1-d. Which of the following is necessary to use for separating channels in FDM? (CO2) 1

(a) time slots
(b) band pass filters
(c) differentiation
(d) none of these

1-e. For Stop-and-Wait ARQ, for 10 data packets sent, _____ acknowledgments are needed. (CO3) 1

(a) exactly 10
(b) less than 10
(c) more than 10
(d) not required

1-f. In Hamming code, if the message is 8 bits, then the parity bit is_____ bit. (CO3) 1

(a) 1
(b) 2
(c) 3
(d) 4

1-g. The network layer is concerned with _____ of data. (CO4) 1

(a) bits
(b) frames
(c) packets
(d) bytes

1-h. The size of an IP address in IPv6 is _____. (CO4) 1

(a) 4 bytes
(b) 128 bits
(c) 8 bytes
(d) 100 bits

1-i. Which one protocol delivers/stores mail to receiver server? (CO5) 1

(a) simple mail transfer
(b) post office
(c) internet mail access
(d) hypertext transfer

1-j. Which of the following is not a type of encryption? (CO5) 1

(a) Symmetric encryption
(b) Asymmetric encryption
(c) Hashing
(d) Compression

2. Attempt all parts:-

2.a. Why is the computer network so important? (CO1) 2

2.b. Define TDM. (CO2) 2

2.c.	What is Framing? (CO3)	2
2.e.	What are three separate protocols of email? (CO5)	2
2.d.	For the address 132.7.21.84, find the type of network and the network address? (CO4)	2

SECTION-B 30

3. Answer any five of the following:-

3-a.	How are the guided media different from unguided transmission media? (CO1)	6
3-b.	Explain Bus and Mesh topology. (CO1)	6
3-c.	Explain the importance of asynchronous TDM.(CO2)	6
3-d.	How the sliding window protcol is better ? Explain it using example? (CO2)	6
3.e.	Define Framing error and explain how it is removed.(CO3)	6
3.f.	Explain IPv6 addressing. (CO4)	6
3.g.	Write the difference between IMAP and POP. What are their uses? (CO5)	6

SECTION-C 50

4. Answer any one of the following:-

4-a.	Explain transmission medium. How are the guided media different from unguided transmission media? (CO1)	10
4-b.	What are the protocols, why it is needed and what are its key elements? Also, explain its role with the help of example. (CO1)	10

5. Answer any one of the following:-

5-a.	Explain the concept of wireless LAN with the help of example. (CO2)	10
5-b.	Explain the concept of FDM with the help of example. (CO2)	10

6. Answer any one of the following:-

6-a.	Explain Selective Repeat ARQ method with suitable diagram. (CO3)	10
6-b.	Explain various Controlled access protocols with suitable diagram. (CO3)	10

7. Answer any one of the following:-

7-a.	Explain TCP congestion control. (CO4)	10
7-b.	What is IP addressing? How is it classified? How is subnet addressing is performed? (CO4)	10

8. Answer any one of the following:-

8-a.	Discuss the basic model of FTP. (CO5)	10
8-b.	Explain the simple network management protocol. List its various components and explain each of them briefly. (CO5)	10