Printed Page:- 04 **Subject Code:- ACSE0502**

Roll. No:

NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: V - THEORY EXAMINATION - 2023

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. Message switching techniques use the principle of _____. (CO1) 1

(a) Stop and wait

(b) Store and forward

(c) Store and wait

(d) None of these

1-b. In TDM, the transmission rate of a multiplexed path is always _____ the sum of the transmission rates of the signal sources. (CO1) 1

(a) Greater than

(b) Lesser than

(c) Equal to

(d) Equal to or greater than

1-c. Which one is the error detection and error correction code? (CO2) 1

(a) cyclic redundancy check

(b) Hamming Code

(c) Checksum code

(d) Parity Check

1-d. In _____ methods, no station is superior to another station and none is assigned the control over. (CO2) 1

(a) Random access

(b) Controlled access

(c) Channelization

(d) None of these

1-e. Retransmission of packets must not be done when _____ . (CO3) 1

(a) Packet is lost

(b) Packet is corrupted

(c) Packet is error-free

(d) Packet is timed out

1-f. IPv6 address has _____ bits. (CO3) 1

(a) 16

(b) 32

(c) 64

(d) 128

1-g. Which of the following is a transport layer protocol? (CO4) 1

(a) stream control transmission protocol

(b) internet control message protocol

(c) neighbor discovery protocol

(d) dynamic host configuration protocol

1-h. A port number is _____ bits long. (CO4) 1

(a) 16

(b) 32

(c) 64

(d) 128

1-i. Application layer offers _____ service. (CO5) 1

(a) End to end

(b) Process to process

(c) Host to host

(d) Node to node

1-j.	Which of the following is an application layer service? (CO5)	1

(a) Network virtual terminal

(b) File transfer, access, and management

(c) Mail service

(d) All of the mentioned

2. Attempt all parts:-

2.a.	What are the significance of Local Area Network? (CO1)	2
2.b.	Why the Flow control protocols are needed? (CO2)	2
2.c.	What is the necessity of subnet masking? (CO3)	2
2.d.	What are the three ranges of port numbers? (CO4)	2
2.e.	How the cryptography is helpful? (CO5)	2

SECTION B **30**

3. Answer any <u>five</u> of the following:-

3-a.	Explain the elements of Computer Networks? (CO1)	6
3-b.	Discuss the various modes of propagating a light along the optical channels. (CO1)	6
3-c.	Explain any one error detection method and give its suitable example. (CO2)	6
3-d.	Explain CSMA/CD and CSMA/CA. (CO2)	6
3.e.	Explain the classes of IPv6 address and also mention its major features.(CO3)	6
3.f.	Explain the use of socket address and Initial sequence number. (CO4)	6
3.g.	Explain the firewalls . (CO5)	6

SECTION C **50**

4. Answer any <u>one</u> of the following:-

4-a.	Explain the functions of OSI Model and its layer ? (CO1)	10
4-b.	Explain the different types of Switching technique? (CO1)	10

5. Answer any <u>one</u> of the following:-

5-a.	Write a short notes on Sliding window technique. (CO2)	10
5-b.	Implement the CRC method for both transmitter and receiver end with the help of an example. (CO2)	10

6. Answer any <u>one</u> of the following:-

6-a.	Explain any one Routing algorithm using an example. (CO3)	10
6-b.	A router inside an organization receives the same packet with a destination	10

address 190.240.34.95. If the subnet mask is \19. Find the subnet address. (CO3)

7. Answer any <u>one</u> of the following:-

7-a.	Explain the various quality of services parameters available in transport layer. (CO4)	10
7-b.	Explain the TCP congestion control method in detail. (CO4)	10

8. Answer any <u>one</u> of the following:-

8-a.	Explain the DNS and Network management protocol? (CO5)	10
8-b.	Explain the Remote login and VPN in detail. (CO5)	10