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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA**(An Autonomous Institute Affiliated to AKTU, Lucknow)****B.Tech****SEM: V - 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. WAN stands for _____. (CO1) 1
- (a) World area network
- (b) Wide area network
- (c) Web area network
- (d) Web access network
- 1-b. A _____ WAN can be developed using leased private lines or any other transmission facility. (CO1) 1
- (a) Hybrids
- (b) peer-to-peer
- (c) Two-tiered
- (d) Three-tiered
- 1-c. The protocol that has no flow or error control is called _____. (CO2) 1
- (a) Simplest Protocol
- (b) Stop and Wait

- (c) Go Back-N Automatic Repeat Request
- (d) Selective Repeat Automatic Repeat Request
- 1-d. A 100 base T-Ethernet LAN has a data rate of _____. (CO2) 1
- (a) 1
 - (b) 10
 - (c) 100
 - (d) 1000
- 1-e. Deals with the issues of creating and maintaining routing tables. (CO3) 1
- (a) Forwarding
 - (b) Routing
 - (c) Directing
 - (d) None directing
- 1-f. Transmission control protocol is: (CO3) 1
- (a) is a connection-oriented protocol
 - (b) uses a three way handshake to establish a connection
 - (c) receives data from application as a single stream
 - (d) all of the mentioned
- 1-g. Transport layer can identify the symptoms of overload nodes using _____. (CO4) 1
- (a) Flow control
 - (b) Traffic control
 - (c) Byte orientation
 - (d) Data integrity
- 1-h. Which among the several transport services deals with the addresses, protocol utility class in addition to performance evaluating features of a connection? (CO4) 1
- (a) Connection Management
 - (b) Quality of Service
 - (c) User Interface
 - (d) Status Reporting
- 1-i. Which one of the following is not an application layer protocol? (CO5) 1
- (a) media gateway protocol
 - (b) dynamic host configuration protocol

(c) resource reservation protocol

(d) session initiation protocol

1-j. The HTTP request message is sent in _____ part of three-way handshake. (CO5) 1

(a) First

(b) Second

(c) Third

(d) Fourth

2. Attempt all parts:-

2.a. What makes a network effective and efficient? (CO1) 2

2.b. Mention the difference between static and dynamic channel allocation. (CO2) 2

2.c. Differentiate between circuit switching and packet switching using suitable diagram. (CO3) 2

2.d. Name the three services that uses UDP and TCP. (CO4) 2

2.e. How is a secret key different from public key? (CO5) 2

SECTION B

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3. Answer any five of the following:-

3-a. Explain briefly the Bus and Star topology with its advantages and disadvantages. (CO1) 6

3-b. Explain the modes of communication with suitable examples. (CO1) 6

3-c. Explain various Controlled access protocols. (CO2) 6

3-d. Differentiate between Thin Ethernet and Thick Ethernet. (CO2) 6

3.e. When a packet switch receiver a distance-vector message from a neighbour, will the switch's forwarding table always change? (CO3) 6

3.f. Explain the sliding window concept. (CO4) 6

3.g. Explain the Encryption and Decryption methods. (CO5) 6

SECTION C

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4. Answer any one of the following:-

4-a. What are important terminologies we come across networking concepts? (CO1) 10

4-b. Explain TCP/IP model and how it works? (CO1) 10

5. Answer any one of the following:-

5-a. Write down the advantages and disadvantages of various data link layer protocols. (CO2) 10

5-b. Differentiate between Traditional, Fast and Gigabit Ethernet. (CO2) 10

6. Answer any one of the following:-

6-a. What do you understand by internetworking? Discuss the parameters on which network differ. (CO3) 10

6-b. Difference between IPv4 & IPv6? (CO3) 10

7. Answer any one of the following:-

7-a. Describe the significance of flow control and retransmission in TCP for reliable data delivery. (CO4) 10

7-b. Draw and explain with the help of diagram the Windows Management used on Transport layer. (CO4) 10

8. Answer any one of the following:-

8-a. How Discuss the role and functionality of the Domain Name System (DNS) in the context of the Internet. (CO5) 10

8-b. Discuss the concept of network management and its importance in ensuring the reliability, performance, and security of computer networks. (CO5) 10