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INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech IV Semester End Examinations (Supplementary) - July, 2018

Regulation: IARE – R16

COMPUTER NETWORKS

Time: 3 Hours

(Common to CSE | IT)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1. (a) Explain Transmission control protocol / Internet Protocol suite in detail by explaining all TCP/IP layers. [7M]
 (b) What is propagation delay? Consider a point-to-point link 4 km in length. At what bandwidth would propagation delay (at a speed of 2×10^8 m/s) equal transmit delay for 100-byte packets? [7M]
2. (a) Explain and differentiate packet switching and circuit switching with a diagram. [7M]
 (b) What is transmission impairment? If the signal at the beginning of a cable with -0.3 dB/km has a power of 2 mW, what is the power of the signal at 5 km? [7M]

UNIT – II

3. (a) Discuss what kind of problems can arise when two hosts on the same Ethernet share the same hardware address. [7M]
 (b) What is the procedure of calculating checksum? Calculate the checksum for the data 7, 11, 12, 0, 6. Calculate the syndrome if data 12 becomes 13 during transmission. [7M]
4. (a) Define Highlevel Data Link Control(HDLC). Discuss the modes and types of frames. [7M]
 (b) What is error detection? Consider a user want to transmit the message 1011001001001011 and protect it from errors using the CRC-8 polynomial. [7M]

UNIT – III

5. (a) Explain Internet Control Message Protocol (ICMP) as error reporting and query message. [7M]
 (b) Define Subnet. Consider a company is granted the site address 201.70.64./16. The company needs six subnets of equal size, accordingly design the subnets. [7M]
6. (a) Differentiate between IPv4 and IPv6 with its detailed sketch. [7M]
 (b) Describe the working of Border Gateway Protocol(BGP) with an example [7M]

UNIT – IV

7. (a) Discuss the issues of sliding window when SWS=RWS with an example and mention the technique how to overcome. [7M]
 (b) What is multiplexing and de-multiplexing and why it is required? Discuss the working w.r.t connection oriented and connectionless with an example. [7M]

8. (a) Explain 3-way handshake in TCP. Draw the packet transmission sequence when: Host A sends one segment to Host B. Suppose that this segment has sequence number 92 and contains 8 bytes of data. After sending this segment, Host A waits for a segment from B with acknowledgment number 100. [7M]
- (b) Explain why TIME WAIT is a somewhat serious problem if the server initiates the close than if the client does. Describe a situation in which this might reasonably happen. [7M]

UNIT – V

9. (a) What is DNS? Mention the difference between TLD and authoritative servers with an example. Justify how the naming convention is resolved in DNS. [7M]
- (b) Describe the structure of HTTP request and response message. [7M]
10. (a) Discuss in detail on electronic mail by using a scenario. [7M]
- (b) Explain about FTP communication process with the help of a neat sketch. [7M]

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