BT-5/D-23   45263
COMPUTER NETWORK
ES-CS-AIDS-305A

Time : Three Hours]   [Maximum Marks : 75

Note : Attempt any *Five* questions.

1. Answer each part in brief. Each of it is of 3 marks :

   (a) State difference between HTTP and HTTPS.

   (b) What is Medium Access Control Sub layer ?

   (c) What is the purpose of the Domain Name System ? Discuss the three main divisions of the domain name space.

   (d) What do you mean by adaptive and non-adaptive routing algorithm ?

   (e) Define QoS.   5×3=15

2. (a) Explain the working of pure ALOHA and slotted ALOHA protocols. How slotted ALOHA improve the performance of pure ALOHA ?   8

   (b) Explain the three way handshaking protocol to establish the transport level connection.   7

3. (a) Consider the use of 10 K-bit size frames on a 10 Mbps satellite channel with 270 ms delay. What is the link utilization for stop-and-wait ARQ technique assuming $P = 10^{-3}$? 8

(b) Write advantages of Next-generation IPv6 over IPv4. 7

4. (a) Write short notes on any *two* of the following :
(i) SMTP
(ii) HTTP
(iii) ICMP 7

(b) Explain Asymmetric Cryptography. Also, write the steps used in RSA algorithm, demonstrate the transmission of character "F" using RSA. 8

5. (a) Explain the following terms by taking real-world examples :
(i) Go Back-N
(ii) Selective repeat 7

(b) Discuss the different physical layer transmission media. 8

6. (a) What is OSI Model ? Explain the functions, protocols and services of each layer. 8

(b) How does FTP work ? Differentiate between passive and active FTP. 7

7. (a) Explain Leaky bucket algorithm and token bucket algorithm for congestion control. Also write its steps.

8

(b) Illustrate the performance issues for GO-BACK-N data link protocol. 7

8. (a) Define topology and explain the advantage and disadvantage of Bus, Star and Ring topologies. 7

(b) Describe the functional differences between statistical and synchronous time division multiplexing. 8