

comp/IT/CN/CBGS/03/12/16

Computer Network Q.P. Code : 581300

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No.1 is **compulsory**.
(2) Attempt **any Three** questions out of remaining questions.
(3) Make **suitable** assumptions whenever **necessary**.

1. (a) List the advantages of fiber optics as a communication medium. **20**
(b) List design issues in OSI layers.
(c) What is the use of SSH ?
(d) What is the throughput of the system both in pure ALOHA and Slotted ALOHA, if the network transmits 200 bit-frames on a shared channel of 200kbps and the system produces (a) 1000 frames per second (b) 500 frames per second.
2. (a) Explain any four functions of Session layer with example. **10**
(b) What is ICMP protocol? Explain the ICMP Header format with diagram. **10**
3. (a) Explain CSMA Protocols. Explain how collisions are handled in CSMA / CD. **10**
(b) Discuss the quality of service parameters in computer network. **10**
4. (a) What are the steps involved in link state routing. Explain the contents and requirements of link state packets. **10**
(b) Compare Open Loop congestion control and Closed Loop congestion control. **10**
5. (a) Write a Program for client-server application using Socket Programming (UDP). **10**
(b) An ISP is granted a block of addresses starting with 190.100.0.0/16 (65,536 addresses). The ISP needs to distribute these addresses to three groups of customers as follows : **10**
(i) The first group has 64 customers; each needs 256 addresses.
(ii) The second group has 128 customers; each needs 128 addresses.
(iii) The third group has 128 customers; each needs 64 addresses. Design the sub blocks and find out how many addresses are still available after these allocations.

TURN OVER

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2

6. Write a short notes on the following :

- (i) Virtual LAN
 - (ii) RARP
 - (iii) HDLC
 - (iv) SMTP
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