

Sr. No.....

YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

BTECH (CE/IT) 3rd Semester Dec, 2017

Computer Networks CE-205C

Time: 3 Hours

Max. Marks:75

Instructions:

1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
2. Answer any four questions from Part -B in detail.

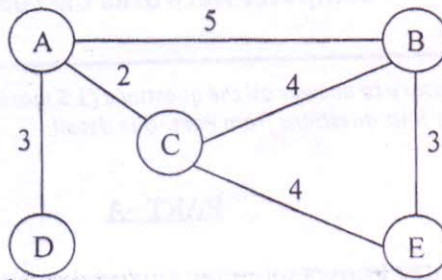
PART -A

- Q1 (a) How does a computer know whether an arriving frame contains an IP Datagram or an ARP message? (1.5)
- (b) Can one network topology be used for both WAN and LAN connections? How? (1.5)
- (c) How does TCP provide flow control? (1.5)
- (d) What is DNS? Explain the resolution process of DNS (1.5)
- (e) What are the usages of SMTP, HTTP and FTP? (1.5)
- (f) Differentiate between Leaky bucket and Token bucket algorithms (1.5)
- (g) How is forwarding different than routing (1.5)
- (h) What is the purpose of cladding in optical fiber (1.5)
- (i) Explain why collision is an issue in random access protocol but not in controlled access or channelizing protocols (1.5)
- (j) Explain why a medium-size or large-size corporation does not want a block of class C addresses (1.5)

PART -B

- Q2 (a) An ISP is granted a block of addresses starting with 150.80.0.0/16. The ISP wants to distribute these blocks to various customers as follows: (7)
- (i) The first group has 128 medium size businesses; each needs 128 addresses.
- (ii) The second group has 64 small businesses; each needs 64 addresses. Design the subblocks and give the slash notation for each subblock. Find out how many addresses are still available after these allocations.
- (b) Explain how you will choose between TCP and UDP? Discuss the TCP Segment Header (8)
- Q3 (a) What is static and dynamic channel allocation. Explain Pure ALOHA system and derive an expression for its throughput (10)
- (b) Given the 10 bit sequence 11101111110 and a divisor 1011, find the CRC (3)
- (c) Draw the graph of NRZ-L, NRZ-I, Manchester and RZ schemes using the following data stream "11001010", assuming the last signal level has been positive (2)
- Q4 Differentiate between the following (5)
- i) OSI and TCP/IP reference model (5)
- ii) Subnetting and supernetting with a suitable example (5)
- iii) Token bus and token ring (5)

- Q5 (a) Differentiate between inter-domain and intra-domain routing. Using Distance vector routing list the contents of each router's routing table for the following network: (7)



- (b) List various limitations of IPv4. Explain the header format of IPv6 with its advantages (8)
- Q6 (a) What is Congestion Control? How is it different from flow Control? Discuss the Leaky Bucket Algorithm & its various disadvantages. (7)
- (b) Differentiate between (8)
- (i) public key and private key encryption
 - (ii) bridges and gateways
 - (iii) multicast routing and unicast routing techniques
- Q7 (a) Differentiate between ATM & frame relay. Discuss the ATM cell structure. (7)
- (b) When and why do we use firewalls in a network? List a couple of drawbacks of using Network firewalls (8)
