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 knows 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 provides flow control? (1.5)

(d) What 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 forwarding is 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 will you 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)

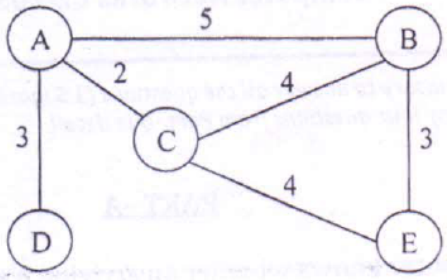
Q4 Differentiate between the following

i) OSIand 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)

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