



SF-7725

B. E. - IV (Sem. - VIII) (Electronics & Communication) Examination

May/June - 2011

Computer Communications & Networking

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दर्शायेव निशानीवाणी विगतो उत्तरवही पर अवश्य लपनी.
 Fillup strictly the details of signs on your answer book.

Name of the Examination :
 B. E. - 4 (SEM. - 8) (ELECTRONICS & COMMUNICATION)

Name of the Subject :
 COMPUTER COMMUNICATIONS & NETWORKING

Subject Code No. : 7 7 2 5 Section No. (1, 2,.....): Nil.

Seat No. : [] [] [] [] [] []

Student's Signature

- (2) Attempt all questions.
- (3) Figures to the right indicate full marks.
- (4) Assume suitable data whenever necessary.

Q.1 (a) Answer the following questions in short. (Two marks each) [12]

- 1. Differentiate flow control and congestion control.
- 2. Explain control field format for S – frame and I – frame of HDLC.
- 3. Explain connection oriented and connectionless data transmission concept.
- 4. What should be the size of sender window & receiver window in go back n ARQ protocol?
- 5. For data 0001110101 draw Manchester and differential Manchester coding.
- 6. In a certain communication channel, the signal power is 100W and the noise power is 10W. In order to send information at rate of 10Kbps, what is required bandwidth?

Q.1 (b) For IP header shown in figure 1 below calculate checksum. [04]

4	5	0	28
5		1	10
4	17	0	
123.45.67.8			
182.168.10.10			

(figure 1)

- Q.1 (c) From the function listed below, identify respective layers of OSI model. [04]
1. Forwarding an Email.
 2. Detection and correction of errors.
 3. Evaluating different process individually.
 4. Transmitting information packets from one network to another network.

Q.2 (a) What are the advantages of dividing an Ethernet LAN with a bridge? Explain 802.x to 802.y bridge with diagram [07]

Q.2 (b) Explain simplex stop and wait protocol used in data link layer. [04]

Q.2 (c) 'Data link layer is responsible for hop to hop delivery' Justify the statement with appropriate diagram. [04]

Or

Q.2 (a) Explain in brief with appropriate diagram, the sliding window protocol and using that how to go for ARQ schemes i.e. go back n and selective repeat? [08]

Q.2 (b) Message string is given by 110010101, taking generator polynomial 10011, find transmission polynomial for CRC implementation. Show how it can be used to detect errors. [07]

Q.3 (a) Describe cabling, encoding and MAC sub layer for IEEE 802.3 standard. [06]

Q.3 (b) Discuss multiple access protocols of Ethernet. [09]

Or

Q.3 (a) Write short note on LAN topology. [05]

Q.3 (b) Write short note on comparison of 802.3, 802.4 and 802.5 LAN [05]

Q.3 (c) Discuss logical link control. [05]

Q.4 (a) Answer the following questions in short. (One mark each) [06]

1. Identify broadcast address for the subnet 172.16.8.159/25?
2. Which network layer policies affect congestion?
3. Convert the IP address whose hexadecimal representation is C22F1582 to dotted decimal notation.
4. How router can identify, received packet is fragmented?

5. List any two application layer protocol, which uses TCP as transport layer protocol.
6. A digital signature is a type of symmetric key cryptography. True or False? Justify.

Q.4 (b) Fill in the blanks. (One mark each) [06]

1. FTP requires _____ TCP connections to transfer a file.
2. IPv6 uses _____ bit address.
3. _____ is the technique by which a process verifies that its communication partner is who it is supposed to be.
4. The art of breaking cipher is called _____
5. Distance vector routing has drawback which is known as _____
6. _____ is an example of interior gateway protocol.

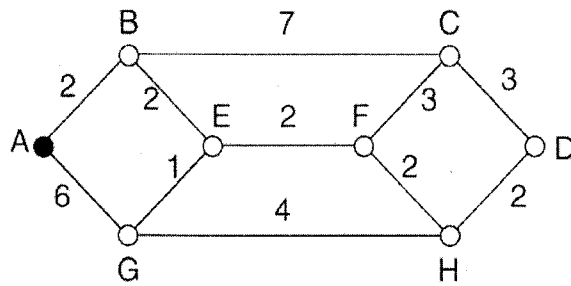
Q.4 (c) For IP address 170.242.32.56 with a subnet mask of 11 bits. [04]

- (a) Find out network address.
- (b) Identify number of subnets on the network.
- (c) How many hosts are possible on given subnet?
- (d) What is host range on given subnet?

Q.4 (d) A host with IP address 130.23.3.20 and physical address B23455102210 has a packet to send to another host with IP address 130.23.43.25 and physical address A46EF45983AB. The two hosts are on the same Ethernet network. Explain ARP request and reply with diagram. [04]

Q.5 Attempt **any three** from the following. [15]

1. Explain TCP segment header.
2. Explain TCP crash recovery.
3. Explain any one congestion control algorithm with diagram.
4. Discuss Internet Protocol.
5. Explain shortest path routing algorithm from router A to D for the subnet shown in figure below.



Q.6 Write short note on **any three** of the following. [15]

1. Diffie Hellman key exchange authentication protocol
2. Public key signature.
3. Multicasting and broadcasting.
4. Explain firewall with appropriate diagram.
5. Relation between Name servers, URL and world wide web.
