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SF-7061

B. E. III (Sem. VI) (Comp.) Examination

May / June – 2011

Computer Network - I

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ B. E. 3 (Sem. 6) (Comp.)

Name of the Subject :

☛ Computer Network - 1

☛ Subject Code No. : 7 0 6 1 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

(2) Use separate answer sheet for separate sections.

(3) Make assumption whenever required.

(4) Numbers on the right indicate marks.

SECTION - I

1 (a) Attempt following :

(i) The preamble field is used to synchronize the receiver's clock. True/False. **1**

(ii) "Beacon" is a special control frame in 802.4 Standard. True/False. **1**

(iii) Packets that are ahead of schedule get slowed down and packets that are behind schedule get speeded up. This is called_____. **1**

(iv) Address containing all 1s in destination address is called **1**

(a) Broadcasting

(b) Multicasting

(c) Unicasting

(d) Multiple unicasting

(v) When hierarchical routing is used, the routers are divided into what we call_____. **1**

(vi) What is Difference between the communication and transmission ? 1

(vii) Match the following : 4

1	Sliding window protocol	1	At Data link Layer
2	FDDI	2	TCP/IP Model
3	Bridge	3	Congestion control
4	Internet Protocol	4	Backbone for network
		5	Flow control

(b) In 802.4 frame format, End of Frame Delimiter is required but in case of 802.3 frame format, it is not required. Why ? 5

(c) Discuss Resource reservation protocol. 5

2 (a) What are various columns in any routing tables ? What are various metric used for evaluation of any route ? 5

(b) Explain Distance vector routing algorithm with a small example. Also discuss one major problem of this algorithm. Can this algorithm be used for a network which is widely spread and having huge number of routers ? Justify your answer. 10

OR

2 (a) Discuss various properties which are desired for routing algorithm. 5

(b) Explain Link State Routing algorithm. 10

3 Attempt any **three** from the following : 15

(i) Explain Forward Error Correction technique of Error detection and correction.

(ii) Flooding algorithm can be used to measure the best time to reach to any node in the network. Justify.

(iii) If routers have an infinite amount of memory, what will be status of congestion ? Justify your answer.

(iv) Using Huffman Encoding method, encode the following symbols. Following table shows Symbol and its frequency.

Symbol	A	T	C	E	I	H
Freq.	20	10	12	28	14	16

SECTION - II

4 (a) Attempt following : **10**

(i) A bridge has an access to _____ address of a station on the same network.

(ii) In _____ routing method, all the routers have a common database.

(iii) In mesh topology, if there are n devices in a network, each device has _____ ports for cables.

(iv) Slotted ALOHA does not require global time synchronization. (True/False)

(v) Define p-persistent CSMA.

(vi) _____ problem persists in Distance vector routing algorithm.

(vii) The topology with highest reliability is_____.

(viii) Decryption and encryption of data are responsibility of _____ layer.

(ix) Fibre optics have maximum segment is_____.

(x) A machine can have more than one IP address (True/False)

(b) Why is there no need for CSMA/CD in full-duplex Eternet mode ? **4**

(c) Discuss the duties of transport layer in detail. **6**

5 (a) Compare and contrast a circuit-switched network and a packet-switched network. **8**

OR

5 (a) Explain SR-232 standard. Show its pin connection for null modem. **8**

(b) Discuss the architecture of Bluetooth. **7**

6 Attempt any **three** from the following : **15**

(i) Discuss the difficulty faced during building a bridge between 802.x and 802.y.

(ii) Explain Binary exponential backoff algorithm.

(iii) Explain Broadcast Routing.

(iv) Discuss choke packets.
