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10EC/TE71

Seventh Semester B.E. Degree Examination, June/July 2018
Computer Communication Networks

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

PART – A

1. a. Match the following functions to the appropriate layers in the OSI model :
 - i) Reliable process – to – process message delivery.
 - ii) Route selection.
 - iii) Dividing the transmitted bit stream into frames.
 - iv) Provides user services such e-mail and File transfer.
 - v) Transmission of bit stream across physical medium. **(05 Marks)**
- b. Give a brief over of SS7 signaling. **(05 Marks)**
- c. With diagram, explain TCP / IP protocol stack. **(06 Marks)**
- d. Calculate the minimum time required to download 0.5 million bytes of information using of the following technologies :
 - i) V 32 modem ii) V 90 modem iii) ADSL modem iv) Cable modem. **(04 Marks)**
2. a. What is Framing? How frames can be classified? Explain bit stuffing and destuffing with an example. **(10 Marks)**
- b. With necessary figures, explain the stop and wait ARQ protocol for noisy channels. **(10 Marks)**
3. a. Explain CSMA and show the behaviour of the three persistence methods of CSMA. Compare the vulnerable times in CSMA and CSMA/CD. **(10 Marks)**
- b. A slotted ALOHA network transmits 500 bit frames using a shared channel with 500 Kbps bandwidth. Find the throughput if the system produces 500 frames / sec. **(04 Marks)**
- c. Explain Polling & token passing in controlled access method. **(06 Marks)**
4. a. Give the four generation of Ethernet and their data rates. **(04 Marks)**
- b. Explain the following with respect to Fast Ethernet :
 - i) Implementation ii) Encoding iii) 100 – BASE – TX. **(06 Marks)**
- c. What is Hidden station and exposed station problem? How it can be solved? **(10 Marks)**

PART – B

5. a. Explain each of the following in brief :
 - i) Passive hub ii) Repeater iii) Bridge iv) Router. **(08 Marks)**
- b. What are Transparent bridges? Explain the process of learning in transparent bridges. Which factors create looping problems in Transparent bridge. **(08 Marks)**
- c. Briefly explain VLAN. **(04 Marks)**
6. a. What is Class less addressing in IP V₄? What is Mask? Explain. **(06 Marks)**
- b. What are different strategies used in the transition of IP V₄ to IP V₆? **(09 Marks)**

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

- c. Find the error if any, in the following IP V₄ addresses :
- i) 324.74.31.12 ii) 201.14.7.24.3 iii) 10001.23.14.67
 - iv) 24.211.045.71 v) 221.218.44
- (05 Marks)
- 7 a. Compare IP V4 and IP V6 headers. (04 Marks)
- b. List and explain three forwarding techniques (06 Marks)
- c. With necessary diagram, explain Path Vector Routing (PVR) protocol. (10 Marks)
- 8 a. List the TCP features. Explain TCP segment format with diagram. (10 Marks)
- b. With diagram, explain Recursive and Iterative resolution. (10 Marks)
