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10MCA456

Fourth Semester MCA Degree Examination, June/July 2014
Advanced Computer Networks

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1 a. Compare and contrast between TCP/IP and ISO-OSI models. (10 Marks)
b. Write a SONET network and explain the purpose of the following components: STSMUX, Regenerator and add drop multiplexer. (10 Marks)
- 2 a. Write the general structure of STS frame with overheads. Also describe the structure. (04 Marks)
b. Explain the STS-1 Frame's section overhead, line overhead and path overhead providing details of all the bytes in overheads. (12 Marks)
c. Calculate the data rate that could be achieved with a STS-9 signal. (04 Marks)
- 3 a. Describe the frame relay frame structure. Also write the extended frame relay address format structure for 3 and 4 bytes addresses. (10 Marks)
b. Explain the ATM architecture and three types of connections (paths) supported by ATM. (10 Marks)
- 4 a. Write the structure of ATM UNI and ATM NNI cell and briefly describe the fields in the cell. (04 Marks)
b. Explain the purpose of AAL1, AAL2 layers of ATM with diagrams. (16 Marks)
- 5 a. Explain IPV6 protocol with IPV6 datagram structure. Also list the extension headers supported by IPV6. (10 Marks)
b. What is the need of logical to physical address mapping? Describe a protocol that supports logical to physical address mapping with packet formats and appropriate request and reply packets. (10 Marks)
- 6 a. Write the taxonomy of common multicast protocols. (02 Marks)
b. With an example explain any distance vector multicast routing protocol and core based tree protocol. (14 Marks)
c. Compare multicasting and multiple unicasting. (04 Marks)
- 7 a. Compare TCP and SCTP protocols with protocol headers. (10 Marks)
b. What parameters are used to describe the characteristics of flow of data in communication link? Briefly describe the parameters. (04 Marks)
c. Explain leaky bucket algorithm for traffic shaping. (06 Marks)
- 8 a. Write the RTP packet header format and explain every field in detail. (10 Marks)
b. With example explain any two routing protocols for mobile ad-hoc networks. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.