

Sixth Semester B.E. Degree Examination, Dec. 2013/Jan. 2014
Computer Networks – II

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Explain the virtual circuit packet switching set up procedure. With the help of an example network discuss how the routing tables for virtual circuit packet switching are generated. (10 Marks)
- b. For the network in Fig. Q1(b), find the shortest paths from node 1 to all other nodes using Dijkstra's algorithm. Sketch the shortest path tree from node 1 to other nodes. (10 Marks)

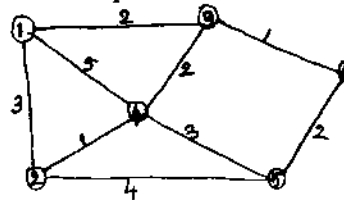


Fig. Q1(b)

- 2 a. Describe the FIFO techniques for managing traffic at packet level. (04 Marks)
- b. Explain the following fields in IPV4 header i) IHL ii) Type of service iii) protocol. (06 Marks)
- c. Suppose a router receives an IP packet containing 600 data bytes and has to forward the packet to a network with maximum transmission unit of 200 byte. The IP header is 20 bytes long. Show the fragments that the router creates and specify the relevant values in the fragment header (total length, fragment offset, more bit). (10 Marks)
- 3 a. State any four differences between IPV6 and IPV4. (04 Marks)
- b. Briefly explain the phases in a TCP connection. (06 Marks)
- c. Explain in detail, the BGP message. (10 Marks)
- 4 a. Explain the OoS parameters defined and negotiated in an ATM connection. (10 Marks)
- b. Discuss the ATM cell header format with a net diagram. (10 Marks)

PART – B

- 5 a. Explain the different data types used in the structure of management information. (10 Marks)
- b. Discuss the different network security threats. (04 Marks)
- c. Apply the RSA algorithm to i) Encrypt the plaintext ii) find the values of d iii) decrypt the ciphertext. Plaintext = 19, e = 7, p = 5, q = 11. (06 Marks)
- 6 a. Discuss the different resource allocation schemes. (08 Marks)
- b. Explain the MPLS operation and the routing in MPLS domain, in detail. (12 Marks)
- 7 a. Design a Huffman encoder for a source generating $\{a_1, a_2, a_3, a_4, a_5\}$ with respective probabilities $\{0.5, 0.2, 0.15, 0.1, 0.05\}$. (08 Marks)
- b. Explain the components and session signaling in SIP protocol, in detail. (12 Marks)
- 8 a. Describe the DSDV protocol for Ad – hoc networks. (10 Marks)
- b. Explain a typical wireless sensor node structure, with the help of a diagram. (10 Marks)