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**Sixth Semester B.E. Degree Examination, June/July 2018**  
**Computer Networks – II**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
 at least 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)

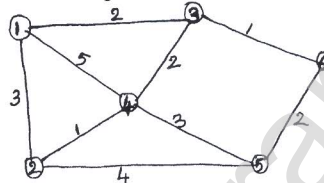


Fig. Q1(b)

- 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. Explain the network addressing of IPV6. (08 Marks)
- b. With a neat diagram, explain UDP datagram. (06 Marks)
- c. Explain internet group management (IGMP) protocol. (06 Marks)
- 4 a. What are the six QoS performance parameters in ATM? (06 Marks)
- b. With a neat diagram, explain ATM cell header format. (08 Marks)
- c. Explain BISDN reference model. (06 Marks)

**PART - B**

- 5 a. Write a note on structure of management information. (08 Marks)
- b. Apply RSA and do the following:  
 i) Suppose  $P = 5$ ,  $q = 11$  find  $e$  and  $d$ .  
 ii) Encrypt the following to get the cipher texts  $P_1 = 18$ ,  $P_2 = 19$  and  $P_3 = 1$ .  
 iii) Decrypt the cipher texts obtained above. (12 Marks)
- 6 a. Explain VPN and its types based on tunneling. (07 Marks)
- b. Explain the various types of resource allocation schemes. (06 Marks)
- c. Write a note on overlay networks. (07 Marks)
- 7 a. Explain the session initiation protocol. (10 Marks)
- b. Explain Shannon's coding theorem in detail. (10 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)

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