

Roll No. ....

Total Pages : 4

**321101**

**December, 2019**

**M. Tech. (ECE) 1st Semester**

**Advanced Communication Networks (MEC-101)**

**Time : 3 Hours**

**Max. Marks:75**

*Instructions :*

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

**PART - A**

1. (a) Explain at which layer IP, Port and Physical addressing scheme is used in OSI model. (1.5)
- (b) Differentiate between fairness and efficiency. (1.5)
- (c) Give two differences between token bucket and leaky bucket algorithm. (1.5)
- (d) Give two difference between IP and integrated services model. (1.5)

- (e) What are problems of intserv model that were overcome by diffserv model. (1.5)
- (f) Differentiate between binary tries and multi-bit tries for flow identification. (1.5)
- (g) What problems will be solved using IPV6. (1.5)
- (h) Explain how IP over ATM is advantageous. (1.5)
- (i) Give the advantage of weighted fair Queuing over simple queuing technique. (1.5)
- (j) Give the IP address to broadcast a packet. (1.5)

### **PART - B**

- 2. (a) What are the design goals of ATM network? Explain ATM network model giving details about each layer. (7.5)
- (b) Explain TCP/IP fairness issue and how it can be solved. (7.5)
  
- 3. (a) Computer A has 19.5MB to send on a network and transmits the data in a burst @ 6 Mbps. The maximum transmission rate across routers in the network is 4 Mbps. If Computer A's transmission is shaped using a leaky bucket, how much capacity must the queue in the bucket hold not to discard any data? (5)

(b) Explain integrated services architecture in detail. (10)

4. (a) What are the advantages of diffserv model over intserv model. Also, explain diffserv model in detail. (7.5)

(b) The following are the prefixes

$$P_1 = 0^*$$

$$P_2 = 01000^*$$

$$P_3 = 011^*$$

$$P_4 = 1^*$$

$$P_5 = 100^*$$

$$P_6 = 1100^*$$

$$P_7 = 1101^*$$

$$P_8 = 1110^*$$

$$P_9 = 1111^*$$

Draw the multi-bit binary tries with prefix fixed to 2, 4 and 5 bits. (7.5)

5. (a) Explain MPLS architecture in detail. (5)

(b) Differentiate between multi-bit, patricia algorithm, binary tries and longest prefix matching for flow scheduling. (10)

6. (a) Give various QoS parameters to admission control. Also, explain how it is used in intserv model. (7½)
- (b) Explain the format of IPV4. Also, explain code-point in detail. (7½)
7. Write short notes on the following :
- (a) RED.
- (b) Traffic engineering issues in MPLS.
- (c) High speed scheduler design. (15)
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