

# CBCS Scheme

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16/17SCS22

## Second Semester M.Tech. Degree Examination, June/July 2018 Advances in Computer Networks

Time: 3 hrs.

Max. Marks: 80

Note: Answer FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. List and explain the requirements that influence the network design. (10 Marks)  
b. Suppose a 128 Kbps point to point link is set up between earth and a rover on mars. The distance from earth to mars is approximately 55 Gm and data travels over the link at the speed of light  $3 \times 10^8$  m/sec.  
i) Calculate the minimum RTT for the link  
ii) A camera on the roller takes pictures of its surroundings and sends to earth. How quickly after a picture is taken can reach on earth? Assume that each image is 5 MB in size. (06 Marks)

OR

- 2 a. With a neat time line diagram, explain the four different scenarios for stop and wait algorithm. (08 Marks)  
b. Explain 5 layer TCP/IP reference model with a neat diagram. (08 Marks)

### Module-2

- 3 a. Describe virtual circuit switching with example. (08 Marks)  
b. Explain how bridges use spanning tree algorithm to handle loops. Give an example. (08 Marks)

OR

- 4 a. Describe different fields of IPV4 header format with a neat diagram. (10 Marks)  
b. What is the need for DHCP? Explain the working of DHCP. (06 Marks)

### Module-3

- 5 a. Explain distance vector routing protocol with an example network. (10 Marks)  
b. For the network shown in Fig.5(b), show how link state algorithm builds the routing table for node A. (06 Marks)

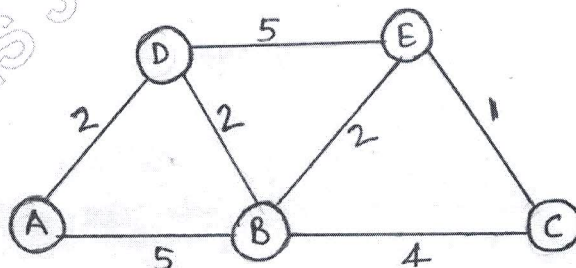


Fig.Q5(b)

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OR

- 6 a. Briefly explain about BGP characteristics. (10 Marks)  
b. What are the general characteristics of mobile IP technology? (06 Marks)

**Module-4**

- 7 a. Briefly explain about different "TCP congestion control" mechanisms. (08 Marks)  
b. Explain the following queuing disciplines : i) FIFO ii) Fair queuing. (08 Marks)

OR

- 8 a. With a neat diagram explain three-way hand shake algorithm used by TCP to establish and terminate connection. (08 Marks)  
b. Explain UDP segment format. Mention the advantages and disadvantages of using UDP. (08 Marks)

**Module-5**

- 9 a. What are the different characteristics of HTTP explain in brief. What is the purpose of GET command in HTTP? (10 Marks)  
b. Explain the mechanism for mapping domain names to addresses. (06 Marks)

OR

- 10 a. Briefly explain about different congestion avoidance mechanisms. (10 Marks)  
b. What is URL? Explain with example. (06 Marks)

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