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Roll No. :

333675(33)

B. E. (Sixth Semester) Examination, April-May 2020

(New Scheme)

(IT Engg. Branch)

ADVANCED COMPUTER NETWORK

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory and carries 2 marks. Attempt any two parts from (b), (c) and (d) of each question and carries 7 marks.

Unit-I

1. (a) What are the functions of physical layer.
- (b) Explain the need of layered architecture and also discuss the function of physical layer.
- (c) Differentiate between message, packet and circuit switching.

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- (d) A 1000 bit block of data is to be transmitted between two computers. Determine the ratio of propagation delay to the transmission delay. If you are using 100 m of twisted pair wire and transmission rate of 10 kbbs. Assume that the velocity of an electrical signal within cable is 2×10^8 m/sec.

Unit-II

2. (a) Explain use of routers.
(b) How the shortest path routing works explain with example.
(c) Explain Dijkstra's algorithm.
(d) What are different characteristics of defining optimal routing?

Unit-III

3. (a) What is LAN?
(b) Explain First come first serve splitting algorithm.
(c) What is Token Ring? Explain with the frame format.
(d) What is Aloha? How many types of Aloha's are there? Compare.

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Unit-IV

4. (a) What is Queuing model.
(b) Explain M/M/1 queuing system
(c) Explain Little's theorem.
(d) What is the extension of Jackson's theorem? Explain.

Unit-V

5. (a) What is flow control?
(b) Explain rate adjustment algorithm? Explain its benefits.
(c) Explain node-by-node windows for virtual circuit.
(d) What are the various rate control schemes are there? Explain why it is needed.