

7. (a) What are the *two* types of sliding window ARQ error control ? How do they differ from one another ?
- (b) How are flow and error control handled by X.25 ? Are all the layers involved ?
- (c) Describe the line configuration, transmission mode, and flow and error control methods used by BSC. 6,6,4

Unit-IV

8. (a) How is blocking related to a crossbar switch ?
- (b) Compare a TSI to a TDM bus.
- (c) How is masking related to subnetting ? 4,6,6
9. (a) What is the limiting factor in a crossbar switch ? How does a multistage switch alleviate the problem ?
- (b) What is the function of SMTP ?
- (c) Describe the steps required for data communication for a connection-oriented protocol. 6,4,6

Roll No. :

Total No. of Questions : 9] [Total No. of Pages : 4

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**M.C.A. (Regular) 3rd Semester Current
(CBCS Scheme) Examination, March-2021
(w.e.f. Dec. 2017-18)**

**DATA COMMUNICATION AND COMPUTER
NETWORKS**

Paper-17MCA33C4

Time : Three Hours]

[Maximum Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note :- Question No. 1 is compulsory. Attempt *four* questions by selecting *one* question from each Unit. All questions carry equal marks.

1. (a) Name the factors that affect the reliability of a network.
- (b) What is difference between network layer and transport layer delivery ?
- (c) Why are protocol needed ?

- (d) What is a crosspoint in a crossbar switch ?
- (e) How is the bandwidth of a signal related to its spectrum ?
- (f) What is the major factor that makes PSK superior to ASK ?
- (g) Which sliding window ARQ is more popular ? Why ?
- (h) How does a router differ from bridge ? 2×8=16

Unit-I

- 2. (a) What is bit rate and what is its counterpart in an analog signal ?
- (b) What is the major disadvantage in using NRZ encoding ? How do RZ encoding and biphase encoding attempt to solve the problem ?
- (c) Give a disadvantage for each type of network topology. 4,8,4
- 3. (a) What happens to a beam of light as it travels to a less dense medium ? What happens if it travels to a denser medium ?
- (b) What are the two types of TDM implementations and how do they differ from each other ?
- (c) Describe the layers of the atmosphere. What types of radio communication utilize each ? 6,5,5

Unit-II

- 4. (a) What is the difference between a simple bridge and transparent bridge ?
- (b) The transport layer creates a connection between the source and destination. What the three events involved in a connection ?
- (c) What is the limiting factor in the size of a bus network topology ? Include a discussion of taps in your answer. 5,5,6
- 5. (a) What is the difference between a central and a secondary hub ? What is the difference between a passive and an active hub ? How do these categories interrelate ?
- (b) Why are the layers of the model important to the network administrator ?
- (c) How does a router differ from a bridge ? 6,6,4

Unit-III

- 6. (a) Discuss the concepts of redundancy in error detection.
- (b) What is the data rate for a BRI and PRI ?
- (c) How does the frame layer address field differ from the HDLC address field ? 4,4,8