

S.C.No.—2214303

B.C.A. EXAMINATION, Dec. 2024

(Batch 2022-23)

(Third Semester)

(Main)

DATA COMMUNICATION AND
NETWORKING

22BCA303

Time : 3 Hours

Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. 1 (Unit I) is compulsory. All questions carry equal marks.

Unit I

1. Explain the following :

8×2=16

(a) What is network ?

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- (b) Define protocol.
- (c) What is bid rate ?
- (d) Define bandwidth.
- (e) What is the importance of repeater ?
- (f) What is the use of network interface card ?
- (g) What is routing ?
- (h) Define encryption.

Unit II

2. Explain the following : 16

- (a) Discuss about TCP/IP protocol architecture.
- (b) What is computer network ? Discuss its various applications.

3. (a) Explain in what ways OSI and TCP/IP reference model are same and where they differ ? 8

- (b) Differentiate between connection oriented and connectionless services. 8

Unit III

4. Explain the difference between analog and digital communication by giving suitable example. Show in which condition Analog is better and in which condition digital is better. 16

5. (a) Write a short note on digital modulation. 8
- (b) Describe in brief the various type of transmission media used for data communication. 8

Unit IV

6. (a) What is error correction ? Explain the procedure to correct error using hamming code with an example. 8
- (b) Explain distance vector routing. 8

7. Explain the following : 16
- (a) Explain token passing in detail.
 - (b) Differentiate between switch and hub in detail.

Unit V

8. What are the major design issues of network layer ? Discuss distance vector routing algorithm. 16
9. What is the cause of congestion in networks ? Discuss the leaky bucket congestion control algorithm. 16