

V

(21225)

BCA - V Sem.

18023

B.C.A. Examination, Dec.-2025

Computer Networks

(BCA-503)

Time : Three Hours / [Maximum Marks : 75

Note : Attempt questions from **all** sections as per instructions.

Section-A

(Very Short Answer Type Questions)

Note : Attempt **all** questions. $3 \times 5 = 15$

1. Describe various components of Data Communication?
2. Define bandwidth? Also discuss congestion in networks?

P.T.O.

3. What is MAC address? How it is different from IP Address?
4. Differentiate between a hub and a switch?
5. What is subnetting? Use an example.

Section-B

(Short Answer Type Questions)

Note : Attempt any **two** questions.

$7.5 \times 2 = 15$

6. Describe the role of the transport layer in the OSI Model?
7. What are the different types of network topologies? Explain any two with diagrams?
8. Explain the usefulness of congestion control algorithms? How corrections are handled in data communication?

Section-C

(Long Answer Type Questions)

Note : Attempt any **three** questions.

15×3=45

9. (i) Describe multiplexing? How error detection and correction techniques are adopted?
- (ii) Describe the TCP three way handshake mechanism with a diagram?
10. Draw the OSI model and explain each layer in detail?
11. (i) Describe the differences between peer to peer and client server architectures?
- (ii) Explain the Shanon capacity with suitable example.
12. (i) How does CSMA/CD work in Ethernet networks?
- (ii) Differentiate between synchronous and asynchronous protocols?
13. Compare circuit switching, packet switching and message switching in detail.