



GN-450

106571

V Semester B.C.A. Examination, December - 2019
(Y2K14) (CBCS) (F+R) (2016-17 and Onwards)

COMPUTER SCIENCE

BCA - 501 : Data Communication and Networks

Time : 3 Hours

Max. Marks : 100

Instruction : Answer *all* Sections.

SECTION - A

- I.** Answer **any ten** questions. Each question carries **2** marks. **10x2=20**
1. Define Computer Networks.
 2. Mention the different types of Network topologies.
 3. What is Multiplexing ?
 4. Compare LAN and WAN.
 5. What is Shannon channel capacity for a noisy channel ?
 6. Expand SMTP and SNMP.
 7. Define SNR.
 8. What is digital to digital encoding ?
 9. What is pipelining ?
 10. Define Router.
 11. What is Reservation ?
 12. What is bridge ? List down the different types of bridges.

SECTION - B

- II.** Answer **any five** questions. Each question carries **5** marks. **5x5=25**
13. Explain the types of Data transmission modes.
 14. Explain coaxial cable as transmission medium. Mention its advantages and disadvantages.
 15. Differentiate between datagram and virtual circuits.
 16. What is Hamming code ? How is it used for error correction caused in data transmission ?
 17. Explain pulse code Modulation.
 18. Compare FDMA and TDMA.
 19. Explain the IEEE 802.11 frame structure.
 20. Write a note on packet switching.

P.T.O.

**SECTION - C**

- III.** Answer **any three** questions. Each question carries **15** marks. **3x15=45**
- 21.** (a) Explain OSI reference model with a neat diagram. **8**
(b) Explain different Analog to Analog encoding schemes in detail. **7**
- 22.** (a) Explain the following in detail. **8**
(i) Link State routing
(ii) Hierarchical routing
(b) What are the different types of multiplexing ? Explain any two in detail. **7**
- 23.** (a) Explain Go-Back-N-ARQ and Piggy-backing in detail. **8**
(b) Explain the CRC method of error detection. Give an example. **7**
- 24.** (a) Write a detailed note on : **8**
(i) CSMA schemes
(ii) CSMA/CD
(b) Explain Bellman Ford Algorithm with an example. **7**
- 25.** (a) Write a detailed note on Bridges Hubs, repeater and Gateway. **8**
(b) Write short notes on (i) Congestion Control **7**
(ii) Flow control.

SECTION - D

- IV.** Answer **any one** question. Each question carries **10** marks. **1x10=10**
- 26.** Explain TCP/IP model with a neat diagram.
- 27.** Explain pure and slotted ALOHA in detail.