**(d)** What is data encoding? Explain one of the data encoding techniques in detail?

**(e)** Define Analog to Analog conversion and briefly explain their techniques.

**(f)** Which of the four digital to analog conversion techniques (ASK,PSK, FSK or QAM) is most suitable to noise. Defend your answer.

**3.** Attempt any **Two** of the following questions. **6 x 2 = 12**

**(a)** What are network topologies? Explain each topology in brief.

**(b)** Describe Layered architecture of ISO- OSI reference model. Describe the responsibility of one of the layer in detail.

**(c)** Distinguish between virtual circuit network and datagram network.

**4.** Attempt any **Two** of the following questions: **6 x 2 = 12**

**(a)** Explain the terms:

**(i)** FTP **(ii)** TELNET **(iii)** SMTP **(iv)** NFS (**v**) DNS

**(b)** Define Sliding Window Protocol with example.

**(c)** Explain in brief data link layer protocols..

**5.** Attempt any **Two** of the following questions. **6 x 2 = 12**

**(a)** What is the significance of twisting in twisted-pair cable? Name the advantages of optical fiber over twisted pair and coaxial cable.



**Roll No.** | | | | | | | | | | |

# B.C.A

## FIFTH SEMESTER EXAMINATION, 2018-19

## DATA COMMUNICATION & COMPUTER NETWORK

Time : **3 Hours** Max. Marks : **60**

**Note : (i)** Attempt **ALL** questions.
**(ii)** Choices are given in each question set.

**1.** Attempt any **Four** of the following questions: **3 x 4 = 12**

**(a)** What do you understand from synchronous and asynchronous transmission? Explain with the help of example.

**(b)** What is communication channel? Define its characteristics.

**(c)** Define the terms:

**(i)** Frequency **(ii)** Period **(iii)** Bandwidth **(iv)** Bit Rate (**v**) Band rate

**(d)** What is data communication? What are its four fundamental characteristics?

**(e)** What are some of the factors that determines whether a communication system is LAN or WAN

**(f)** Explain the concept of infra and transmission.

**2.** Attempt any **Four** of the following questions: **3 x 4 = 12**

**(a)** Differentiate between circuit and packet switching.

**(b)** What is multiplexing? Explain frequency division multiplexing

**(b)** **(i)** Explain carrier sense multiple access with collision Avoidence (CSMA/CA)

**(ii)** Explain connection oriented and connectionless services with example.

**(c)** Write short notes on:

**(i)** FDDI **(ii)** Token Ring **(iii)** Token Bus **(iv)** LAN Operating System.



(FDM) with example.

**(c)** Given the frequencies listed below: Calculate the corresponding periods:

**(i)** 20 Hz **(ii)** 10 Hz **(iii)** 150 Hz