Roll No……..….. **Total No. of Printed Pages: [1]**
Total No. of Questions: [09]

BCA-MCA Dual Degree (Semester – 2nd)
COMPUTER NETWORK
Subject Code: BMCAS1202
Paper ID: [19340107]

Time: 03 Hours **Maximum Marks: 60**

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A **(2 marks each)**

Q1. Attempt the following:

a. Describe the fundamental components of a computer network.
b. What is network architecture, and what are its key principles?
c. What are the different types of network topologies?
d. What is a modem and what is its role in data communication?
e. What is Integrated Services Digital Network (ISDN)?
f. What is primary function of CSMA in network communication?
g. What is the difference between the internet and the World Wide Web?
h. Define routing and its significance in computer networking.
i. What are the three primary goals of cryptography?
j. What is remote login, and why is it used in computing?

Section – B **(5 marks each)**

Q2. Describe the characteristics and applications of coaxial cable in networking.
Q3. Explain the process of analog-to-digital conversion in PCM.
Q4. Write a note on design issues of data link layer.
Q5. What services does the network layer provide to the transport layer?
Q6. Describe the basic components of an email system.

Section – C **(10 marks each)**

Q7. Compare the OSI and TCP/IP reference models in terms of structure and functionality.
Q8. Define switching technologies and its types in data networks? Differentiate between circuit switching and packet switching.
Q9. Define access control and management in the context of computer networks. How do access control mechanisms enforce security policies?