

**BACHELOR OF COMPUTER
APPLICATIONS (BCA)
(REVISED)**

Term-End Examination

June, 2026

**BCS-052 : NETWORK PROGRAMMING AND
ADMINISTRATION**

Time : 3 Hours

Maximum Marks : 100

Weightage : 75%

Note : *Question No. 1 is compulsory. Answer
any **three** questions from the rest.*

1. (a) Define a Socket. Write its structure.
List and explain five different types of
socket options available. 10

- (b) Explain the Distance Vector Routing Algorithm with an example. 10
- (c) Explain the TCP connection-establishment and connection-termination using 3-way handshaking along with different segments used in the processes. Make a diagram for each connection-establishment and connection-termination. 10
- (d) What are ICMP messages ? Write the significance of ICMP messages. Also, write the limitations of classful addressing in IPv4. 10
2. (a) How does remote login process work in Telnet ? Explain using a diagram. Also, explain how local login is different from the remote login. 10

- (b) What is a DNS Server ? List and explain any *two* types of DNS servers. Write the step-by-step procedure to illustrate the recursive solution for a DNS server. 10
3. (a) What is the significance of SNMP ? Discuss different security levels implemented in SNMP. 10
- (b) Differentiate between ARP and RARP. With the help of a suitable diagram, explain the working of ARP and RARP. 10
4. (a) How do the layers of TCP/IP model correlate with the layers of the OSI model ? Also, explain the functions of OSI model which are not mapped to TCP/IP model. 10

- (b) Explain the significance of “Type of Service” and “Total Length” fields in the header of IP datagram. 10

5. Write short notes on the following : 4×5=20

- (a) FAT 16 and FAT 32
- (b) Netstat
- (c) Link State Routing
- (d) read() and write () system calls

× × × × ×