Department of Computer Science and Engineering,
Anna University, Chennai- 600025
CS23502- NETWORKS AND DATA COMMUNICATION
Practical
July- Oct 2026
Year/Sem/Batch : III/V/ N

Exercise: 4	Applications using SMTP protocol	30- 07- 2026

Observation questions:

1. What is SMTP, and what is its role in the email delivery system? Which transport-layer protocol does it use, and why?

2. What is the default port used by SMTP? What are the differences between ports 25, 465, and 587?

3. List the sequence of commands exchanged between an SMTP client and server during a typical email transaction (e.g., HELO/EHLO, MAIL FROM, RCPT TO, DATA, QUIT).

4. What is the significance of the numeric reply codes returned by the SMTP server (e.g., 220, 250, 354, 550)? Give the meaning of at least three.

5. What is the difference between SMTP and protocols like POP3 and IMAP? Why can't SMTP alone be used to retrieve emails from a mailbox?

Execution Questions (Programming Language - Java)

1. Write a Java program that connects to an SMTP server using a raw Socket and manually sends the EHLO, MAIL FROM, RCPT TO, DATA, and QUIT commands. Record the server's response code after each command.

2. Using the JavaMail API, write a Java program to send an email with a subject and body to a valid email address. Configure the SMTP host, port, and authentication properties correctly and demonstrate successful delivery.

3. Modify the JavaMail program to send an email with an attachment (e.g., a text file).

4. Attempt to send an email using incorrect authentication credentials and record the exact SMTP error/response received.

Spot Questions

1. Modify your raw-socket SMTP program so that after sending the EHLO command, it prints out the list of extensions/capabilities the server advertises in its multi-line response (e.g., SIZE, STARTTLS, AUTH, etc.), rather than just the first response line. Demonstrate the full captured list.

2. Modify your JavaMail program so the email body is sent as HTML content (e.g., with bold text or a heading) instead of plain text, using the appropriate MIME content type. Send it and demonstrate that the recipient's email client renders the formatting.