

Indian Statistical Institute

Documentation Research and Training Centre  
M.S. in Library and Information Science  
Semester 1, Final Examination (AY 2025-2027)

**Paper 05: Foundations of Information and Communications**

Time: 10:00 AM - 1:00 PM

Max. Marks: 100

Date: 17-11-2025

[Instruction: Read the question before you attempt.]

**Section A**

**(20 x 1 = 20 Marks)**

*(Answer all questions. Each question carries 1 mark.)*

1. Answer the following:
  - i. Define a bit and a byte.
  - ii. Convert the signed binary number 10110111 to decimal.
  - iii. What command in UNIX displays the IP of the system?
  - iv. What does the chmod command do in UNIX?
  - v. What symbol is used for output redirection in UNIX?
  - vi. Name any two types of network topologies.
  - vii. Mention one difference between HTML and XML.
  - viii. Name any two types of DBMS data models.
  - ix. Which SQL command is used to remove a table from a database?
  - x. What is a database?
  - xi. Define a tuple and attribute.
  - xii. What is a primary key?
  - xiii. Define data redundancy.
  - xiv. Write one difference between DELETE and DROP commands in SQL.
  - xv. What is the purpose of the ORDER BY clause in SQL?
  - xvi. Define the term schema.
  - xvii. Write a command to display all databases in MySQL.
  - xviii. What is a relational model?
  - xix. What is the use of JOIN in SQL?
  - xx. What does DNS stand for?

**Section B**

**(14 x 5 = 70 Marks)**

*Attempt any 14 of the following.*

1. Explain the major generations in the evolution of digital computers.
2. Convert: (i) 234 to binary, (ii) 10111011 to decimal, (iii) 25 to hexadecimal.
3. Explain the directory structure of UNIX with a neat diagram.

4. What are file permissions in UNIX?
5. Describe the concept of relative and absolute paths with suitable examples.
6. Explain input/output redirection and piping in shell commands.
7. Explain regular expressions with any three practical examples.
8. Discuss the difference between LAN, MAN, and WAN.
9. What is passwordless SSH access and how can it be set up?
10. Explain the roles of SSH, SFTP, and HTTP in networking.
11. What are the main differences between HTML and XML?
12. Explain the basic structure of an HTML document with example tags.
13. Write SQL commands for:
  - a. Creating a table "Student",
  - b. Inserting values,
  - c. Updating data,
  - d. Deleting a record, and
  - e. Displaying records using SELECT.
14. What is Hypertext and Hypermedia? How are they implemented using HTML?
15. Discuss various *data models* used in DBMS with examples.
16. Explain the important differences between file-based systems and database systems.
17. Write steps to create a new user and grant privileges in MySQL.
18. Explain ACID properties with examples.