(i) **Printed Pages : 3**   Roll No. ....

(ii) **Questions   : 9**   **Sub. Code :** | 1 | 7 | 3 | 7 | 8 |

Exam. Code : | 0 | 0 | 0 | 4 |

B.A./B.Sc. (General) 4ᵗʰ Semester
(2055)

INFORMATION TECHNOLOGY

Paper-B : Data Networks and Web Based Applications

Time Allowed : Three Hours]   **[Maximum Marks : 65**

Note :— (1) The question paper will consist of four Sections.

(2) There are total **NINE** questions comprising **TWO** questions from each Section and **ONE** compulsory question of short answer type.

(3) The students are required to attempt **ONE** question from each section and the compulsory question.

(4) All questions carry equal marks unless specified.

SECTION—A

1. (a) Explain Network Topologies with diagrams.   7

   (b) Describe the OSI and TCP/IP reference models and compare them.   6

2. (a) What are Search Engines ? Explain their working.   7

   (b) Write an HTML program to create a web page with a table, an image, and a hyperlink.   6

SECTION—B

3. (a) What is CSS ? Explain different types of CSS with examples. 7

   (b) Write an HTML program to create a form with validation using JavaScript. 6

4. (a) Explain the Document Object Model (DOM) and its significance in JavaScript. 7

   (b) Write a JavaScript program to check whether a given string is a palindrome. 6

SECTION—C

5. (a) Explain Method Overloading and Method Overriding in Java with examples. 7

   (b) Write a Java program to implement constructor overloading. 6

6. (a) What is Inheritance ? Explain different types of inheritance in Java with examples. 7

   (b) Write a Java program to demonstrate single-level inheritance. 6

SECTION—D

7. (a) What is Exception Handling ? Explain the try, catch, and finally blocks in Java. 7

   (b) Write a Java program to handle ArrayIndexOutOfBounds Exception. 6

8. (a) Explain Multithreading in Java with an example. 7

(b) Write a Java program to create and run multiple threads using the Runnable interface. 6

SECTION—E

9. Answer the following questions briefly :

(a) What is a URL ? Explain its components. 4

(b) Write a JavaScript program to find the factorial of a number. 3

(c) What is the difference between Abstract Class and Interface in Java ? 2

(d) Write a Java Program to demonstrate Thread Synchronization. 2

(e) What is the difference between Java Applet and Java Application ? 2