

2022

M.Sc.

2nd Semester Examination

COMPUTER SCIENCE

PAPER—COS-296

Full Marks : 50

Time : 2 Hours.

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

COS-296 MODULE 1 (OOPs LAB)

Answer any one question.

1×20

1. Write a program to display all prime numbers in a range given as input.

(Turn Over)

2. Write a program to demonstrate the concept of abstract class and interface.
3. Write a multithreaded program to demonstrate the concept.
4. Write a program that handles exceptions. Use try, catch and finally block properly in the program.
5. Write an AWT based program to display a Frame with a button and a text field. Add an event to the button to display "hello world" in the text field.

[PNB + Viva - 05]

COS-296 MODULE 2 (R LAB)

Answer any one question.

1×20

1. Create a data frame named "employee" with empid, name, and contact number. Display the data frame. Add a new column "address" and then add a new row to the data frame. Display the final "employee" data frame.

2. Create an "student" data frame with roll, name, and marks. The data frame should contain at least 5 records.
 - (i) Add an extra column named "department" which shows the department name of the student.
 - (ii) Arrange the records according to the marks obtained by the students. The name should come alphabetically when their marks is same.
3. Create an environment. Create some name and value pair in that environment. Access the value of a particular name. Set a new value to a name. Bind a new name to the environment. Display all the names of the environment.
4. Write a rmarkdown file that shows a bold and italic text, an ordered and an unordered list, a table, a link, and an image.
5. Create a student data frame with roll, name and marks. Write the following queries using the 'dplyr' library:

- (i) Display records with all columns except the 'marks' column.
- (ii) Display the details of the students where marks ≥ 60 .
- (iii) Arrange the student data according to their marks.

[PNB + Viva - 05]
