

Total number of printed pages-4

53 (IT 401) OOPD

2018

**OBJECT ORIENTED PROGRAMMING
AND DESIGN**

Paper : IT 401

Full Marks : 100

Time : Three hours

***The figures in the margin indicate
full marks for the questions.***

Answer any five questions.

1. (a) What is a reference variable ? What is its major use ? Explain with proper example. 10
- (b) What are the advantages of using new operator as compared to the function malloc () ? Explain with example. 10

Contd.

2. Write an interactive menu-driven C++ program that will create a data file containing the list of telephone numbers and implement the following tasks : 20

- (i) Determine the telephone number of the specified person
- (ii) Determine the name if a telephone number is known
- (iii) Update the telephone number whenever there is change.

3. (a) What is a friend function ? What are the merits and demerits of using friend functions ? 10

- (b) Can we have more than one constructor in a class ? If yes, explain the need for such a situation. 10

4. (a) What do you understand by function returning a pointer ? Give *any* suitable example to support your answer. 10

- (b) Write a C++ program to count the number of words and characters in a string. 10

5. (a) What do you mean by dynamic binding ? How is it useful in OOP ? Explain with example. 10

- (b) Write a C++ program that declares an array of 50 elements of type double. Initialize the array so that first 25 elements are equal to the square of the index variable and the last 25 elements are equal to three times the index variable. Output the array so that 10 elements are printed on each line. 10

6. (a) In inheritance, explain the order of invocation of constructors and destructors with an example. 5

- (b) Explain static data member and static member function with an example. 5

- (c) Write a program in C++ to read student's record such as name, sex, roll_number, height and weight from the specified file and to store it in an another file in a sorted order. (name is the key for sorting). 10

7. Write short notes on :

20

(a) Pure virtual function

(b) Function Template

(c) Static binding

(d) Object Diagram.
