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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) Design a class in C++, use suitable member functions and operator overloading to read a string, compare two strings, compute the length of a string and display a string. 10
- (b) Write a program in C++ to generate all the prime numbers within the range 1 to N , where user will provide the value of N through keyboard. 10

Contd.

2. (a) A friend function cannot be used to overload the assignment operator. Explain why. 10
- (b) Can we have more than one constructor in a class? If yes, explain the need for such a situation. 10
3. (a) Write a program that extracts all the numbers from a given file and append it to the file NUMS.txt. Make sure that the given filename be taken as input at runtime and that each member must be on a separate line in NUMS.txt; take careful note of sign and decimal point with the numbers. 10
- (b) Can a generic function be overloaded? Justify your answer with an example. 10
4. (a) How is polymorphism achieved at runtime? Explain with coding. 10
- (b) Can you pass class object as function arguments? Explain with the help of an example. 10

5. (a) What are the different forms of inheritance supported by C++? Explain with example. 10
- (b) Explain the concept of 'this' pointer. 5
- (c) Can we assign a void pointer to an integer type pointer? Justify your answer. 5
6. (a) What is exception handling? Explain exception handling facility provided in C++. 10
- (b) What do you understand by function returning a pointer? Give any suitable example to support your answer. 10
7. Write a program to input a sentence and print the number of characters found in the longest word of the given sentence.
e.g. S = "india is my country", then the output should be 7. 20
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2. (a) What are the different forms of inheritance? Explain with examples. 10

(b) Explain the concept of this pointer. 5

(c) Can we assign a null pointer to an integer type pointer? Justify your answer. 5

3. (a) What is exception handling? Explain exception handling facility provided in C++. 10

(b) What do you understand by function overloading? Give any suitable example to support your answer. 10

4. Write a program to input a sentence and print the number of characters found in the longest word of the given sentence. e.g. S = "India is my country", then the output should be 7. 20