

Total No. of Questions : 8]

SEAT No. :

PA-1235

[Total No. of Pages : 3

[5925]-257

**S.E. (Computer/Artificial Intelligence & Data Science/
Computer Science & Design Engineering)
OBJECT ORIENTED PROGRAMMING
(2019 Pattern) (Semester - III) (210243)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 2) Figures to the right indicate full marks.
- 3) Neat diagrams must be drawn wherever necessary.
- 4) Assume suitable data, if necessary.

Q1) a) Explain the polymorphism feature of OOP. What are the different ways to achieve polymorphism in C++ Language? Explain them along with examples. [5]

b) What is operator overloading? Write a program to overload '+' operator for adding two complex numbers which are object of below complex class. [6]

Class Complex

```
{  
    Private: int real, imag;  
};
```

c) What is Pure virtual function? Illustrate the use of Pure virtual function. [6]

OR

Q2) a) What is runtime polymorphism? How it is achieved in C++. Explain it along with example. [5]

b) What is function overloading? Write definition of three overloaded functions (add) which will add two integer, float and double numbers respectively. [6]

c) Explain abstract class concept along with example. [6]

P.T.O.

- Q3)** a) What are various functions used to manipulate file pointers? Explain using example. [7]
- b) What are command line arguments in C++? Write a program to explain the same. [7]
- c) What are fstream, ifstream and ofstream? Illustrate with help of example. [4]

OR

- Q4)** a) Write a program to create file, read and write record into it. Every record contains employee name, id and salary. Store and retrieve atleast 3 data. [7]
- b) What do you mean by file handling? Explain the following functions. [7]
- i) open()
- ii) get()
- iii) getline()
- c) Write a program to create files using constructor function. [4]

- Q5)** a) Distinguish between overloaded function and function template with suitable example. [4]
- b) What is an exception specification? Explain using suitable example. [6]
- c) What is generic programming? How it is implemented in C++. [7]

OR

- Q6)** a) Write short note on type name and export key word. [4]
- b) Explain class template using multiple parameters with help of program. [6]
- c) Explain exception handling mechanism in C++? Explain by program to handle "divide by zero". [7]

- Q7)** a) What is purpose of iterator and algorithm. [4]
b) What is STL? List and explain different types of STL containers. [6]
c) Write a program to implement map in STL. [8]

OR

- Q8)** a) What are major components of STL. [4]
b) State functions of vector STL. Write a program to explain the same. [6]
c) What is container? List the container classes in C++. Explain any one of them using program. [8]

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