

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All question are compulsory.
 2. Figures to the right indicate full marks.
 3. Students answering in the regional language should refer in case of doubt to the main text of the paper in English.

Q.1 Attempt **any three** of the following: 15

- a. Differentiate Procedure Oriented Programming & Object-Oriented Programming
- b. Explain relationship between objects and classes.
- c. What is object-oriented programming? State any three advantage and its applications.
- d. Explain debugging with types of error.
- e. Explain its characteristics of OOPs.
- f. List and explain application of OOPs.

Q.2 Attempt **any three** of the following: 15

- a. What are constructors? List its types and explain default constructor.
- b. What is a class? How a class can be defined? Discuss various ways of defining member functions of a class.
- c. Explain friend function with an example. List advantages & disadvantages.
- d. What is the difference between variable & constant in C++ programming language?
- e. Explain the difference between C and C ++.
- f. What is destructor? Write a program to destroy the object using destructor.

Q.3 Attempt **any three** of the following: 15

- a. What is pure virtual functions? Explain its implementation.
- b. Describe the concept of polymorphism in brief.
- c. Write a C++ program to overload binary (++) operator.
- d. What is operator overloading? State rules for operator overloading. List the operators that cannot be overloaded.
- e. Demonstrate the use of Static functions with an example.
- f. Explain abstract class and pure virtual function with example.

Q.4 Attempt **any three** of the following: 15

- a. What is inheritance? Discuss various types of inheritance.
- b. Can private member of a base class are inheritable? Justify.
- c. Write a C++ program to implement hybrid inheritance.
- d. Explain multilevel inheritance with example.
- e. What is an Exception? Explain concept of Exception handling in oops.
- f. Explain the use of throw and catch keywords with proper syntax.

Q.5 Attempt **any three** of the following: 15

- a. What are templates? Give an overview of Class Templates & Function Templates.
- b. Write a program to read a file from C++ program.
- c. What are Input and Output Streams?
- d. What is a file? Write down the steps for manipulating files in C++.
- e. What are different methods of opening a file? Write a program to open a file "FYIT" and "FYCS" write student details into file using any methods.
- f. Explain different exception and error handling during file operation.