

[3 Hours]**[Total marks: 80]**

N.B. (1) Question 1 is compulsory.

(2) Attempt any three from remaining five questions.

1. (a) What is multipath inheritance? What is the ambiguity in multipath inheritance? How it can be resolved? **10**
- (b) What are Constructor and Destructor? Explain use of copy constructor with an example. **10**
2. (a) What is Runtime Polymorphism? Explain use of Virtual functions to achieve it. **10**
- (b) Write a program to overload insertion and extraction operator. **10**
3. (a) Explain use of 1) Constant Data Members 2) Constant Functions 3) Explicit 4) Mutable **10**
- (b) Explain the concept of Function Templates. Write a function template to find maximum of two elements. Exercise the function template on various data types such as int, float, double, etc. **10**
4. (a) Explain type conversion? Write a program to convert Dollar into Rupees using object to object conversion. **10**
- (b) Explain exception handling. Write a program to throw user defined function 'InsufficientFundsException' for Bank. Define a class Bank with following functions: **10**
 - i) Deposit()
 - ii) Withdraw(), minimum balance Rs. 500/- else throws InsufficientFundsException
 - iii) Display()
5. (a) Which are different file opening methods? Write a program to copy contents of FILE1 followed by FILE2 in FILE3. **10**
- (b) Differentiate between **10**
 - iv) Procedure oriented language and object oriented language
 - v) Pass by value and pass by reference
6. Write short notes on any FOUR. **20**
 - a) Null and void pointer
 - b) Inline Function
 - c) New and delete operator
 - d) friend function
 - e) Virtual Destructor