

313304

25226

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following :

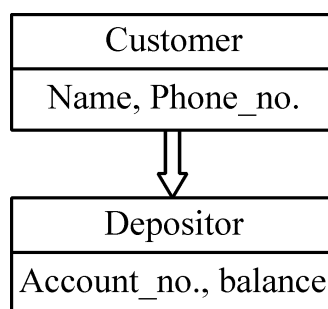
10

- (a) State any four features of object oriented programming.
- (b) Define constructor with example.
- (c) State the types of inheritance.
- (d) State a need of polymorphism.
- (e) Describe use of static data member.
- (f) List any two visibility modes.
- (g) Define the following :
 - (i) Class
 - (ii) Object



2. Attempt any THREE of the following :**12**

- (a) Differentiate between compile time and run time polymorphism (min. 4 points).
- (b) Explain friend function with suitable example.
- (c) Write a C++ program to perform write into file operation.
- (d) Write a program to implement following inheritance as shown in figure.

**3. Attempt any THREE of the following :****12**

- (a) Describe constructor overloading with suitable example.
- (b) Explain pointer to derived class with suitable example.
- (c) Write a C++ program to find area of rectangle using class rectangle which has following details :
 - (i) Accept length and breadth from user
 - (ii) Calculate area
 - (iii) Display result
- (d) Explain virtual base class with suitable example.

4. Attempt any THREE of the following :**12**

- (a) Differentiate between POP and OOP (min. 4 points).
- (b) Explain different file opening modes with suitable example.
- (c) Explain function overloading with example.
- (d) Differentiate between constructor and destructor (min. 4 points).
- (e) Write a program to declare a class college with name and code attribute. Derive a new class student with members as name. Accept and display details of one student along with college data.

5. Attempt any TWO of the following :**12**

- (a) Write a program to declare a class 'employee' having data members 'emp-id' and 'salary'. Accept and display this data for 10 employees.
- (b) Explain scope resolution operator and memory management operator with suitable example.
- (c) Write a program to declare class book containing data members as title, author_name, publication, price. Accept and display this information for one object using pointer to that object.

6. Attempt any TWO of the following :**12**

- (a) Explain 'this' pointer in C++ with example.
- (b) Write a program to copy contents of ABC.txt to PQR.txt.

P.T.O.

- (c) Write a program to implement multiple inheritance as shown in figure. Accept and display data for one object of class Result.

