

17432

15162

3 Hours / 100 Marks

Seat No.

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

Marks

1. (A) Attempt any SIX of the following :

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- (a) Write structure of C++ program.
- (b) How pointer is assigned to object ? Explain with simple example.
- (c) Write general form of member function, definition out of class.
- (d) Define constructor and destructor.
- (e) Define polymorphism. List types of polymorphism.
- (f) List types of inheritance.
- (g) Explain pointer operator and address operator with example.
- (h) Write syntax to declare constructor.

(B) Attempt any TWO of the following :

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- (a) Explain multiple constructor in class with example.
- (b) What is virtual base class ? Explain with example.
- (c) List any four properties of constructor function.

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2. Attempt any FOUR of the following : 16

- (a) What is nesting of member function ? Give one example.
- (b) Describe virtual function with one example.
- (c) State and explain various visibility modifiers in inheritance.
- (d) Differentiate between procedure oriented and object oriented programming languages.
- (e) Explain with example object as member function argument.
- (f) Write a program to declare class 'city' with data members cityname and state. Create array of object of size 5. Read and print data for array using pointer to object.

3. Attempt any FOUR of the following : 16

- (a) List applications of Oop's technology.
- (b) State the use of default parameters in constructor with example.
- (c) Explain constructors in derived class using one example.
- (d) Write a program to overload operator '+' to add two complex numbers.
- (e) Explain pointer arithmetic with suitable example.
- (f) List characteristics of static data members.

4. Attempt any FOUR of the following : 16

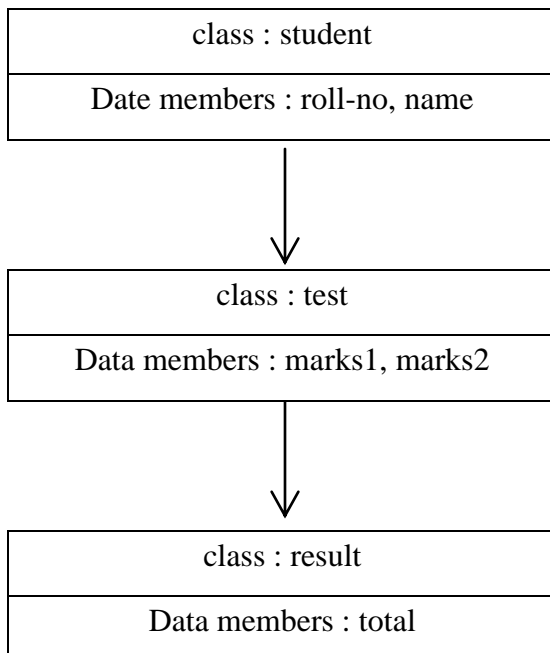
- (a) Write a program to illustrate multiple inheritance. Write suitable data members and member functions.
- (b) Explain overloaded constructor in class with example.
- (c) State scope resolution operator and memory management operator in C++.
- (d) Compare structure and class.
- (e) What is hybrid inheritance ? Give one example.
- (f) Describe the concept of 'this' pointer. Give one example.

5. Attempt any FOUR of the following :**16**

- (a) State the difference between runtime and compile time polymorphism.
- (b) Explain how memory is allocated for the objects of class in C++.
- (c) Write a program to overload ‘- -’ unary operator to decrement the data members of object by one. Assume suitable data.
- (d) Explain insertion and extraction operators.
- (e) Differentiate between call by value and call by reference.
- (f) Write any four rules for operator overloading.

6. Attempt any TWO of the following :**16**

- (a) Write a program to declare class ‘complex’ with data members x and y . Write member function to read and print data members. Read x and y for two objects and add these two objects into third object using friend function.
- (b) Implement inheritance using following figure with member functions for reading and printing data.



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- (c) Write a program to compare two strings and concatenate two strings using pointer to string.
