

17432

21314

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

-
- 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any **SIX** of the following: **12**
- i) What is Data abstraction?
 - ii) Define the following terms:
 - 1) Object
 - 2) Class
 - iii) State the characteristics of destructor.
 - iv) Define inheritance and enlist it's types.
 - v) State any two pointer operator.
 - vi) What is a pointer? Write down the general syntax of it's declaration.
 - vii) Enlist any four operators which can not be overloaded.
 - viii) List types of polymorphism.

P.T.O.

b) Attempt any **TWO** of the following:

8

- i) Differentiate between POP and OOP. (any four points)
- ii) Write a program to define a structure 'Tender' having data members tender-no., cost and company-name. Accept & display this data for two variable of this structure.
- iii) Describe multiple inheritance with suitable example.

2. Attempt any **FOUR** of the following:

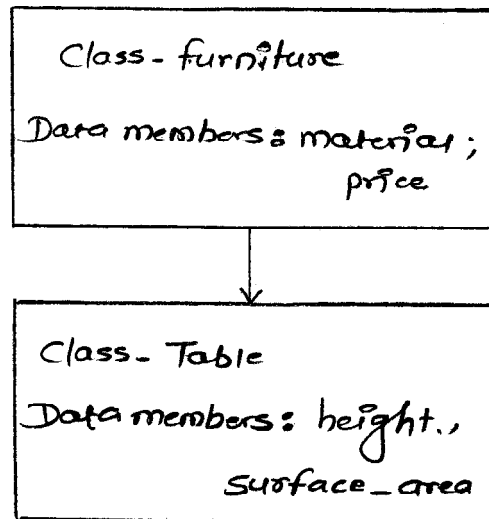
16

- a) Describe any four basic concepts of OOP.
- b) Explain memory allocation for objects.
- c) Write a program to declare a class 'Journal' having data members as journal-name, price & no-of-pages. Accept this data for two objects & display the name of journal having greater price.
- d) What is parameterized constructor? Give the syntax & example of it.
- e) Explain the concept of pointer to object with suitable example.
- f) Distinguish between run-time polymorphism & compile-time polymorphism.

3. Attempt any **FOUR** of the following:

16

- a) State any four features of OOP.
- b) Write a program to implement single inheritance from following Figure No. 1 accept & display the data for one table.

**Fig. No. 1**

- c) Explain different visibility modes used in inheritance.
- d) Write a program to find length of a string using pointer to the string.
- e) State any four rules for operator overloading.
- f) Write a program using function overloading to swap 2 integer numbers & swap 2 float numbers.

4. Attempt any **FOUR** of the following:

16

- a) Enlist the applications of OOP.
- b) Write a program to define a class having data members principle, duration & rate-of-interest. Declare rate-of-interest as static member variable. Calculate the simple interest & display it for one object.

- c) Illustrate the concept of constructor with default argument with suitable example.
- d) State any four characteristics of constructor.
- e) Illustrate the hierarchical inheritance.
- f) Explain the concept of 'this' pointer.

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

16

- a) Explain the concept of friend function.
- b) Write a program to accept string from user & count number of vowels in the string using pointer to string.
- c) Explain the concept of overloaded constructors in a class with suitable example.
- d) Identify the type of inheritance and implement it by writing a program for the following Figure No. 2. Assume suitable member functions.

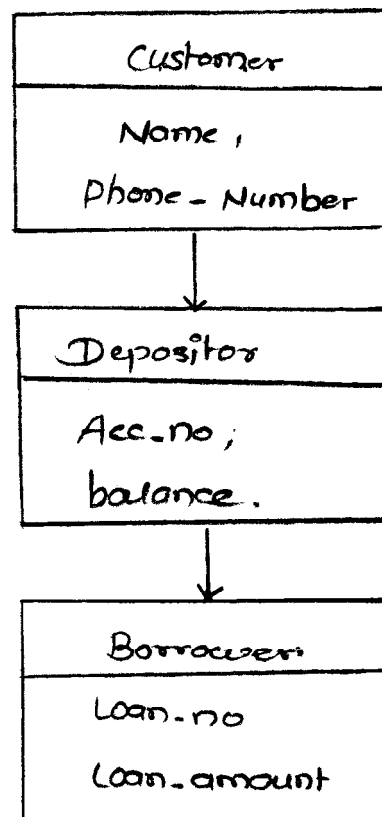


Fig. No. 2

- e) Explain virtual function with suitable example.
- f) Write a program to declare a class distance having data members feet & inches. Overload unary '_' operator so that when it is used with object of this class, it will decrement values of inches by 1.

6. Attempt any TWO of the following:

16

- a) Write a program to declare a class 'staff' having data members as name & department. Accept this data for 10 staffs & display names of staff that are in cm department.
 - b) Explain the concept of virtual base class with it's general syntax & suitable example.
 - c) Write a program to concatenate two strings by using pointers.
-