ROLL NO. _____

Code: AC11/AT22 Subject: OBJECT ORIENTED PROGRAMMING

AMIETE – CS/IT (OLD SCHEME)

Time: 3 Hours **OCTOBER 2012** **Max. Marks: 100**

PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.

NOTE: There are 9 Questions in all.

- **Question 1 is compulsory and carries 20 marks. Answer to Q.1 must be written in the space provided for it in the answer book supplied and nowhere else.**
- **The answer sheet for the Q.1 will be collected by the invigilator after 45 minutes of the commencement of the examination.**
- **Out of the remaining EIGHT Questions answer any FIVE Questions. Each question carries 16 marks.**
- **Any required data not explicitly given, may be suitably assumed and stated.**

Q.1 Choose the correct or the best alternative in the following: (2 × 10)

a. To be called object-oriented, a programming language must allow

(A) functions that return only a single value
(B) #include files
(C) inheritance
(D) All of the above

b. Which type of statement does not occur in computer programs?

(A) Sequence
(B) loop
(C) denial
(D) selection

c. Which of the following statement is false?

(A) A function is a block of code that performs a specific task
(B) Functions allow programmers to break large and complex problems into small and manageable tasks
(C) Functions allow programmers to use existing code to perform common tasks
(D) Functions can be called, or invoked, only once in a program

d. Overloaded functions are required to

(A) have the same return type **(B)** have the same number of parameters
(C) perform the same basic functions **(D)** None of the above

e. A base class may also be called a

(A) child class **(B)** friend class
(C) derived class **(D)** parent class

f. Which of the following operator can be overloaded through friend function?

(A) -> **(B)** =
(C) ( ) **(D)** *

g. Paying attention to the important properties while ignoring nonessential details is known as_____

(A) selectiveness **(B)** polymorphism
(C) abstraction **(D)** summarizing

h. Which of the following are valid characters for a numeric literal constant?

(A) a comma (,) **(B)** a dollar sign ($)
(C) a percent sign (%) **(D)** None of the above

i. A function that is called automatically each time an object is destroyed is called _____.

(A) constructor **(B)** destructor
(C) destroyer **(D)** terminator

j. A widget is to the blueprint for a widget as an object is to

(A) a member function **(B)** a class
(C) an operator **(D)** a data item

Answer any FIVE Questions out of EIGHT Questions.
Each question carries 16 marks.

Q.2 a. What are Procedure-Oriented languages? List few shortcomings of languages based on the block structured paradigm. **(8)**

b. Define the following by giving suitable example
(i) Abstract Class
(ii) Data Types
(iii) Inheritance
(iv) Encapsulation **(8)**

Q.3 a. Why operator overloading is some time called ad-hoc polymorphism? Explain with example? **(4)**

b. Differentiate the following with example-
(i) for, while and do- loops
(ii) Continue and goto-control statements
(iii) Inline function & function prototype **(8)**

c. State atleast four rules regarding operator overloading. **(4)**

Q.4 a. What is an abstract class? Show by a suitable example where and how this concept of abstract class is used. **(8)**

b. What is a constructor? How are they declared? Explain with an example program in C++. **(8)**

Q.5 a. Write features of member functions in Object Oriented Programming. **(6)**

b. Which types of conversion are defined as standard conversion? **(2)**

c. Write a program to illustrate operator overloading concept for concatenating two strings. **(8)**

Q.6 a. What is difference between virtual function and virtual class? **(6)**

b. What is inherited from the base class? Explain with example. **(6)**

c. Describe Static Vs Dynamic Polymorphism. **(4)**

Q.7 a. Is it possible that a function is friend of two different classes? Explain using a suitable program how this is implemented in C++. **(8)**

b. Is it possible to set default values or types for class template parameters? Support your answer with an example. **(8)**

Q.8 a. Differentiate between two methods of opening a file using suitable example. **(10)**

b. With an example show how you can design your own manipulators. **(6)**

Q.9 a. What is Exception in object oriented paradigm? Discuss the exceptional handling mechanism using a suitable example. **(10)**

b. What do you mean by static class members? Explain the characteristics. **(6)**