

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

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- 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

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

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- 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)

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- 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)