

AMIETE – CS/IT (NEW SCHEME) – Code: AC55/AT55**Subject: OBJECT ORIENTED PROGRAMMING WITH C++****Time: 3 Hours****Max. Marks: 100****JUNE 2010****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.**
- **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. Which of the following is a properly defined struct?

- (A) struct {int a}; (B) struct employee {int a;};
(C) struct employee int a; (D) struct employee {int a};

b. Array subscripts in C++ always start at _____.

- (A) -1 (B) 1
(C) 0 (D) value provided by user

c. What does the inline keyword do?

- (A) Indicates a function declaration.
(B) Tells the compiler to use function in other programs.
(C) Causes all function calls to be replaced by the code from the function.
(D) None of the above.

d. The operator << is called _____.

- (A) insertion operator (B) put to operator
(C) both (A) & (B) (D) None of these

e. What purpose do classes serve?

- (A) Data Encapsulation.
(B) Simplifying code Reuse.
(C) Provides convenient way of modelling real-world objects.
(D) All of the above.

f. Which of the following is the proper keyword to allocate memory dynamically in C++?

- (A) new. (B) create.
(C) value. (D) if.

g. Operator overloading is _____.

- (A) making C++ operators operate on objects
(B) not possible in C++
(C) both (A) & (B)
(D) None of the above

h. Which is not an access specifier in C++?

- (A) Protected. (B) Hidden.

(C) Private.

(D) Public.

i. Templates in C++ enable programmers to _____.

- (A) write friend functions
 (B) define generic classes and functions
 (C) write inline functions
 (D) none of the above

j. Which of the following is the type of inheritance in C++?

- (A) Multilevel Inheritance. (B) Multiple Inheritance.
 (C) Hybrid Inheritance. (D) All the above.

Answer any FIVE Questions out of EIGHT Questions.

Each question carries 16 marks.

- Q.2** a. What is Procedure Oriented Programming system (POP)? List the drawbacks of POP. (6)
- b. What is Object Oriented Programming? List and explain various features of OOPs. (10)
- Q.3** a. Explain **do-while** statement with an example. (4)
- b. What is the relationship between an array and a pointer? What is the difference? (4)
- c. Write a C++ program to create a structure data type to store name and salary of an employee. Define a member function to display the details of a given employee. (8)
- Q.4** Discuss the following with an example:
- (i) Reference variables. (ii) Function overloading.
 (iii) Default arguments. (iv) Return by reference. (4 × 4)
- Q.5** a. What is a class? Explain the structure of a class with the help of an example. (5)
- b. List and explain the keywords used to control the access to members of a class. (5)
- c. Explain the different types of constructors with suitable examples. (6)
- Q.6** a. Define operator overloading with syntax. List the operators that cannot be overloaded in C++. (8)
- b. Write a C++ program to add two COMPLEX objects by overloading binary + operator. Declare the operator function as a member function of COMPLEX class. (8)
- Q.7** a. What is parametric polymorphism? (4)
- b. What is inheritance? Explain different types of inheritance with suitable diagram and syntax. (12)
- Q.8** a. What is a template? Write a C++ program to find greatest of two numbers using class template. (12)
- b. What is Exception handling? (4)

Q.9 Write short note on:-

- (i) IO stream class Hierarchy.
- (ii) Standard template library.

(8×2)