Code: DE70/DC56/ DE122/DC106

Subject: OBJECT ORIENTED PROGRAMMING WITH C++

DipIETE – ET/CS (Current & New Scheme)

Time: 3 Hours | **December 2016** | **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. Which of the following is correct about class and structure?
   (A) Class can have member functions while structure cannot.
   (B) Class data members are public by default while that of structure are private.
   (C) Pointer to structure or classes cannot be declared.
   (D) Class data members are private while that of structure are public.

b. Which of the following is not the member of class?
   (A) Friend function   **(B)** Static function
   (C) Virtual function   **(D)** Const function

c. How many instances of an abstract class can be created?
   (A) 1   **(B)** 5
   (C) 13   **(D)** 0

d. Which of the following is correct about function overloading?
   (A) The types of arguments are different.
   (B) The number of argument is same.
   (C) The order of argument is different.
   (D) Both **(A)** and **(C)**

e. Which of the following concepts means wrapping up of data and functions together?
   (A) Abstraction   **(B)** Encapsulation
   (C) Inheritance   **(D)** Polymorphism

f. Which of the following is not a type of constructor?
   (A) Parameterized constructor   **(B)** Friend constructor
   (C) Copy constructor   **(D)** Default constructor

g. Which one of the following is the correct way to declare a pure virtual function?
   (A) virtual void Display(void){0};
   (B) virtual void Display = 0;
   (C) virtual void Display(void) = 0;
   (D) void Display(void) = 0;

Code: DE70/DC56/ DE122/DC106
Subject: OBJECT ORIENTED PROGRAMMING WITH C++

h. Which of the following ways are legal to access a class data member using this pointer?
   (A) this->x   **(B)** this.x
   (C) *this.x   **(D)** *this-x

i. Which of the following cannot be used with the keyword virtual?
   (A) Class   **(B)** Member functions
   (C) Constructor   **(D)** Friend Function

j. Which of the following is the correct class of the object cout?
   (A) Iostream   **(B)** Istream
   (C) Ostream   **(D)** ifstream

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

Q.2 a. Write any four differences between POP and OOP. Write any five benefits of OOP. **(4+4)**

b. Explain Enumerated data type with example in C++. **(8)**

Q.3 a. Explain structure with example in C++. Write one difference between "structure" and "class" in C++. **(6+2)**

b. Write C++ program that sort the array of given 10 numbers using array. **(8)**

Q.4 a. Explain two types of Defining member functions of class in C++. **(4+4)**

b. Explain "Inline" function with example in C++. Write one advantage and one disadvantage of inline function. **(6+2)**

Q.5 a. Explain "copy constructor" with example in C++. **(8)**

b. What is operator overloading? Explain unary operator overloading. **(2+6)**

Q.6 a. What is inheritance? Write different types of inheritance. Explain Multiple inheritances with example. **(1+2+5)**

b. (i) Differentiate: Private, Public, Protected **(4)**
   (ii) Explain Single inheritance. **(4)**

Q.7 a. What is polymorphism? Explain function overloading. **(2+6)**

b. Explain Exception Handling Mechanism with simple example. **(8)**

Q.8 a. What is Template? Explain Class Templates with example. **(1+7)**

b. Explain Function Templates with example. **(8)**

Q.9 a. Explain precision( ),width( ), and fill( ) ios functions with example. **(2+3+3)**

b. Explain the following functions: **(8)**
   (i) eof()   (ii) write()
   (iii) read()   (iv) close()