ROLL NO. _____

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

DIPIETE – ET/CS (Current & New Scheme)

Time: 3 Hours | **June 2019** | **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. A normal C++ operator that acts in a special way on newly defined data types is said to be
(A) Glorified **(B)** Encapsulated
(C) Classified **(D)** Overloaded

b. Main () returns a value of type
(A) Real **(B)** Char
(C) Int **(D)** Null

c. Sharing of common information are achieved by the concept of
(A) Virtual Copying **(B)** Inheritance
(C) Encapsulation **(D)** None of these

d. The library function exit() causes an exit from
(A) The loop in which it occurs
(B) The block in which it occurs
(C) The function in which it occurs
(D) The program in which it occurs

e. The template function declaration specifies
(A) Template class **(B)** A generic class
(C) Exception **(D)** Identifiers

f. In C++ the exception handler is invoked with a
(A) Try block **(B)** Throw exception
(C) Catch function **(D)** Abort function

g. A member function can always access the data
(A) In the object of which it is a member
(B) In the class of which it is a member
(C) In the object of the class of which it is a member
(D) In the public part of its class

h. Private data members can be accessed
(A) Only from the base class itself
(B) Both from the base class and from its derived class
(C) From the class which is a friend of the base class
(D) None of these is correct

i. Operator overloading is
(A) Making C++ operators work with objects
(B) Making C++ operators more than they can handle
(C) Giving new meaning to existing C++ operators
(D) Making new C++ operators

j. A function that is called automatically when an object is created is known as
(A) Instantiation **(B)** Function prototype
(C) Constructor **(D)** Structure

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

Q.2 a. Clearly differentiate between Procedure Oriented and Object Oriented programming languages. **(8)**

b. Explain: **(2x4)**
i. Identifiers
ii. Keywords
iii. Data types
iv. Literals

Q.3 a. Write a program in C++ to add two 3x3 matrices. **(8)**

b. How pointers are used to access structure members? Explain with suitable program. **(8)**

Q.4 a. What are static data members? Explain static function with suitable example. **(8)**

b. What is friend function? Explain use of friend with suitable program. **(8)**

Q.5 a. Write a program in C++ to overload binary '-' operator. **(6)**

b. How copy constructors are used? Explain. **(6)**

c. Write a class and a main function to show the order in which the constructor and destructors are invoked. **(4)**

Q.6 a. Explain Inheritance and its types. **(4)**

b. What is the constructor calling sequence in multiple inheritance? **(6)**

c. Explain Virtual classes with a suitable example. **(6)**

Q.7 a. Explain dynamic polymorphism using virtual functions. **(8)**

b. Explain exception handling mechanism in C++ with an example. **(8)**

Q.8 a. What is generic class? Explain with example. **(8)**

b. What are function templates and what are their uses? Explain. **(8)**

Q.9 a. Explain I/O streams in C++? **(5)**

b. Write a program to copy contents of abc.txt file into xyz.txt file. **(7)**

c. Write various file mode parameters. **(4)**