

DIPIETE – ET/CS (Current & New Scheme)

Time: 3 Hours

DECEMBER 2018

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)

- Which of the following is not a type of constructor?
(A) copy constructor (B) friend constructor
(C) default constructor (D) parameterized constructor
- Which of the following is not the member of class?
(A) static function (B) friend function
(C) Const function (D) virtual function
- Which of the following concepts means determining at runtime what method to invoke?
(A) data hiding (B) dynamic typing
(C) dynamic binding (D) dynamic loading
- Which of the following concepts of OOPs means exposing only necessary information to client?
(A) encapsulation (B) abstraction
(C) data hiding (D) data binding
- Which of the following is not a type of inheritance?
(A) multiple (B) multilevel
(C) distributive (D) hierarchical
- Reusability of code in C++ achieved through-
(A) Polymorphism (B) Inheritance
(C) Encapsulation (D) Both (A) and (B)
- An exception in C++ cannot be generated using keyword
(A) try (B) throw
(C) catch (D) go

- h. What is a function template?
(A) creating a function without having to specify the exact type
(B) creating a function with having an exact type
(C) Both (A) and (B)
(D) None of these
- i. Which of the following statements is not valid about operator overloading?
(A) only existing operators can be overloaded
(B) overloaded operators must have at least one operand of its class type
(C) the overloaded operators follow the syntax rules of the original operator
(D) None of these
- j. What does a reference provide?
(A) alternate name for the class
(B) alternate for the variable
(C) alternate name for the pointer
(D) None of these

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. (8)
- b. Explain identifiers in C++. (4)
- c. What are the operators used in C++? (4)
- Q.3** a. Write a program in C++ to multiply two 3x3 matrices. (8)
- b. Explain how structures in C++ are different than class. (4)
- c. Write short note on pointers of C++. (4)
- Q.4** a. What are the static data members and static functions? Explain each with example. (8)
- b. What do you understand by friend function? Explain with suitable example. (8)
- Q.5** a. Write a program in C++ to overload binary '+' operator with the help of friend function. (8)
- b. What is copy constructor? Explain. (4)
- c. What is the use of Destructor? How they are invoked? (4)

- Q.6** a. Write a short note on various types of inheritance? (6)
- b. What is constructor calling sequence in inheritance? (5)
- c. Explain virtual classes and its uses? (5)
- Q.7** a. What is polymorphism? Explain its types. (4)
- b. Explain virtual functions? How dynamic polymorphism achieved through virtual functions? Explain. (6)
- c. What are exceptions? How exception handling done in C++? Explain. (6)
- Q.8** a. What is the need of templates? (4)
- b. Explain function templates? (6)
- c. What is generic class? How it is used? (6)
- Q.9** a. What is the input/output streams hierarchy in C++? Explain. (6)
- b. What is the difference between opening a file with a constructor function and opening a file with open() function? (6)
- c. What are the advantages of saving data in binary form? (4)