Day : Friday   Time : 10:00 AM-01:00 PM

Date : 5/8/2022   **S-24081-2022**   Max. Marks : 60

N.B.
  1)   All questions are **COMPULSORY**.
  2)   Figures to the right indicate **FULL** marks.
  3)   Draw neat labelled diagrams **WHEREVER** necessary.
  4)   Assume suitable data, if necessary.

Q.1 a) State benefits of Object oriented programming language.   **(05)**

b) Write similarities and differences between C and C++.   **(05)**

OR

Q.1 Explain features of C++ (Inheritance, data encapsulation, polymorphism, data   **(10)**
abstraction) in detail.

Q.2 a) Inline function has access of private class members. Justify the statement by   **(05)**
giving example.

b) What is the use of constructors and destructors in C++. Give suitable example.   **(05)**

OR

Q.2 a) Write syntax for declaration of;   **(05)**
i) Constructor   ii) Destructor   iii) Class   iv) Function   v) Friend function

b) Write a C++ program comprising of following;   **(05)**
i) Class member (data member)   ii) Member function   iii) Inline function
iv) Exterior function   iv) Instances of class (objects)

Q.3 a) What is base class and derived class. Write proper syntax by giving example.   **(05)**

b) Write a note on virtual base class.   **(05)**

OR

Q.3 a) Explain hierarchal inheritance in detail.   **(05)**

b) Write a program explaining concept of any one type of inheritance.   **(05)**

P.T.O.

Q.4 a) Write a program explaining polymorphism in C++. **(05)**

b) Explain virtual constructors and destructors. **(05)**

OR

Q.4 a) Explain run time polymorphism. **(05)**

b) Write a program to calculate factorial of an integer using pointer to function **(05)** concept.

Q.5 a) Write a program to; **(05)**
    i)   Modify the details of an item in file
    ii)   Display the content of file

b) Discuss exception handling mechanism in C++ **(05)**

OR

Q.5 a) Comment on various tasks performed by error handling code. Give syntax. **(05)**

b) Write a note on **(05)**
    i)   Throwing mechanism
    ii)   Catching mechanism

Q.6 Write a program illustrating use of pointers to object. Discuss its output as well. **(10)**

OR

Q.6 a) Define pointers. Also write about declaring and initializing pointers. **(05)**

b) What is reference variables and dereference operator in C++. **(05)**

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