II B. Tech I Semester Supplementary Examinations, October/November - 2020

OBJECT ORIENTED PROGRAMMING THROUGH C + +

(Com. to CSE, IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**

2. Answer **ALL** the question in **Part-A**

3. Answer any **THREE** Questions from **Part-B**

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PART –A

1. a) Define variable and reference variable? (2M)
b) What are manipulators? Explain predefined manipulators in C++? (5M)
c) What is inline function? (3M)
d) What is the use of declaring a class as a friend of another? (4M)
e) What are destructors? When they are called? What is their utility? (4M)
f) Define function overriding? Compare it with function overloading? (4M)

PART –B

2. Write a C++ program illustrating Queue data structure? Ensure your program contains special member functions like constructors, copy constructors and Destructors to create and destroy Queue objects?
(16M)
3. Write about IOS format functions with suitable examples?
(16M)
4. a) What is a friend function? Discuss its pros and cons with respective to normal member functions?
(8M)
b) Write a C++ program illustrating Exception overloading?
(8M)
5. Briefly explain different types of container classes with suitable examples?
(16M)
6. a) What is inheritance? How does it enable code reusability, explain with an example?
(8M)
b) What are virtual functions? Describe the rules for declaring virtual functions?
(8M)
7. a) Write a C++ program illustrating bubble sort using function templates? (8M)
b) Write a C++ program illustrating overloading of templates functions? (8M)
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B. Tech II Semester Regular/Supplementary Examinations, April/May - 2019

OBJECT ORIENTED PROGRAMMING THROUGH C++

(Com. to CSE, IT)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**

2. Answering the question in **Part-A** is Compulsory

3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Give the features of C that are not in C++. (2M)

b) What is the difference between a constructor and destructor? (2M)

c) What is the significance of width () and precision ()? (2M)

d) Give the applications of 'this' pointer. (2M)

e) How does an inline function differ from a preprocessor macro? (2M)

f) State the differences between pure virtual function and virtual function. (2M)

g) Give the use of abstract class.
(2M)

PART –B

2. a) State the important features of object oriented programming. (7M)

b) Describe the major parts of C++ Program.
(7M)

3. a) Write a C++ program demonstrating the viability of new and delete operators for a single variable as well as an array.
(7M)

b) How will you destroy the objects initialized by the constructor in the program?
(7M)

4. a) Explain the visibility of base class members for the access specifiers: private, protected and public while creating the derived class and also explain the syntax for creating derived class.
(7M)

b) Write a C++ program to exchange the values between two classes using friend functions.
(7M)

5. a) How does polymorphism promote extensibility? Illustrate. (7M)

b) With an example explain how late binding can be achieved in C++.
(7M)

6. Write a C++ program that illustrates exception handling with the help of keywords: try, throws and catch.
(14M)

7. What is STL? Briefly explain the use of containers, vectors, lists and maps. (14M)
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Code No: R161215

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PART –A

1. a) What is an Object based language? (2M)

b) What are anonymous objects? (2M)

c) What is the use of scope resolution operator in C++? (2M)

d) Differentiate between early binding and late binding (2M)

e) Give the properties of a static variable. (2M)

f) How will you make a function inline? (2M)

g) How is an iterator be similar to array subscript? (2M)

PART -B

2. a) Compare object oriented programming with procedure oriented programming. (7M)

b) Compare the features of C Programming language to that of C++ Programming language.
(7M)

3. a) With an example explain the syntax for defining a class. (7M)

b) What is function overloading? What are the principles of function overloading?
(7M)

4. a) Describe various visibility modes available in C++. (7M)

b) With an example, explain the syntax for passing arguments to base class constructors in multiple inheritances.
(7M)

5. a) How virtual functions can be used to implement runtime polymorphism? Describe. (7M)

b) What is a pointer? How to declare a pointer to a class and an object?
(7M)

6. a) What are class templates? How are they different from classes? Explain with sample C++ code.
(7M)

b) What should be placed inside try block and catch block? When do you use multiple catch handlers?
(7M)

7. a) Write a C++ program to insert elements into a list. (7M)

b) What is a container? Give its significance. Give an overview on its types. (7M)

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PART –A

1. a) Define an object. (2M)

b) Differentiate between class and structure. (2M)

c) What is runtime polymorphism? (2M)

d) Illustrate with an example, how the setw manipulator works? (2M)

e) What is an inline function? (2M)

f) What are pure virtual functions? (2M)

g) Compare vector with a list. (2M)

PART -B

2. a) Mention advantages and disadvantages of object oriented programming over functional programming.
(7M)

b) Explain the following concepts used in object oriented paradigm. Message passing, code reusability.
(7M)

3. a) How memory is allocated to an object? State with an example. (7M)

b) Write a C++ program to define two overloaded functions to swap two integers and to swap two characters.
(7M)

4. a) Explain operator overloading with the implementation of complex numbers. (7M)

b) With an example, explain the order of invocation of constructors and destructors in multiple inheritances.
(7M)

5. a) Describe the mechanism of creating virtual functions in C++ with an example. (7M)

b) Write a C++ program that declare and use pointer to an object.
(7M)

6. a) Can we overload a function template? Illustrate with an example. (7M)

b) What is the sequence of events when an exception occurs? Explain them.
(7M)

7. a) How to initialize elements of vectors and lists? Illustrate. (7M)

b) What is the use of Iterator while using containers? Justify with an example. (7M)
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PART –A

1. a) Give the benefits of inheritance. (2M)

b) List the characteristics of a constructor. (2M)

c) Why the words such as c in and c out are not considered as keywords? (2M)

d) What are I/O manipulators? (2M)

e) Define pure virtual functions. (2M)

f) Differentiate between function overloading and function templates. (2M)

g) What is an iterator in STL? (2M)

PART -B

2. a) What are the drawbacks of conventional programming? Explain how object oriented programming overcome them.
(7M)

b) Explain polymorphism, data abstraction and data encapsulation with examples.
(7M)

3. a) How the member function can be defined inside class and outside the class? Explain.
(7M)

b) Write a program in C++ to find the factorial of a given number using recursion.
(7M)

4. a) Write a C++ program to overload binary '+' operator which will add two complex numbers of the form (a+ib).
(7M)

b) Write a C++ program to implement multiple inheritances with public access specific.
(7M)

5. a) With an example, explain how virtual functions are hierarchical. (7M)

b) How to create a virtual destructor? What is the necessity of making it virtual?
(7M)

6. a) What are macros? How are they different from preprocessor directives and templates? (7M)

b) Write a program to swap two variables using a function template.
(7M)

7. Explain briefly the three foundational items of standard template library. (14M)
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2. Answer **ALL** the question in **Part-A**

3. Answer any **FOUR** Questions from **Part-B**

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PART –A

1. a) Define dynamic binding. (2M)
b) List out the types of constructors. (2M)
c) Compare private and protected member access modes. (2M)
d) Name the operators that cannot be overloaded. (2M)
e) What is the default access mode for class members? (2M)
f) What is generic programming? (2M)
g) What is the difference between function overloading and function template? (2M)

PART -B

2. a) Give the structure of a C++ Program. (7M)
b) Demonstrate encapsulation and polymorphism.
(7M)

3. a) How members function is defined inside a class and outside the class? Explain with an example each.
(7M)
b) Define parameterized constructors. How to write them? Give an example.
(7M)

4. a) Define operator overloading. Write the rules to overload operator. (7M)
b) Define the term virtual base class and its implementation in C++. How it is used in function overriding?
(7M)

5. a) How a pointer is declared ad initialized? Give an overview of pointer arithmetic. (7M)
b) Describe the mechanism of creating virtual functions in C++ with an example.
(7M)

6. a) Write a program to create a template function for bubble sort and demonstrate the sorting of integers and characters.
(7M)
b) What are macros? How are they different from templates? Give an example.
(7M)

7. What is a container? State and explain types of containers along with the iterators. (14M)
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PART –A

1. a) Compare OOP language and structured programming language. (2M)

b) List the characteristics of a constructor. (2M)

c) What is an inline function? What is the use of it? (2M)

d) What is the use of scope resolution operator? (2M)

e) Differentiate run –time polymorphism with compile time polymorphism. (2M)

f) What is the use of this pointer? (2M)

g) Define ADT. (2M)

PART -B

2. a) Describe the demerits of conventional programming with suitable examples. (7M)

b) Give the principles of object oriented programming.
(7M)

3. a) How to create a class? How to create an object? Explain with an example. (7M)

b) In which order the constructors and destructors are executed? Explain with an example.
(7M)

4. Write a C++ program to illustrate multiple and multilevel inheritance.
(14M)

5. a) Write a C++ program to illustrate pure virtual functions. (7M)

b) Discuss how dynamic allocation is done in C++ programming.
(7M)

6. a) Explain the use of try, catch and throw for exception handling in C++. (7M)

b) What is a class template? How is it different from a general class? Explain with an example.
(7M)

7. a) Briefly explain the use of Vectors and lists. (7M)

b) What is containership? How it differ from inheritance? (7M)
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PART –A

1. a) What is data encapsulation? (2M)
b) Give the importance of destructors. (2M)
c) What are nested classes? (2M)
d) Define pure virtual functions (2M)
e) What is the use of namespace? (2M)
f) Give the advantages and usage of macros. (2M)
g) Distinguish between maps and multimaps (2M)

PART -B

2. a) Compare object oriented programming with procedure oriented programming. (7M)
b) How does object oriented approach differ from object based approach? Give the applications of OOP.
(7M)

3. a) How a class accomplishes data hiding? Explain with an example. (7M)
b) Illustrate with an example the mechanism of defining a member function and overloading it.
(7M)

4. With an example, explain the syntax for passing arguments to base class constructors in multiple inheritance.
(14M)

5. a) Write a C++ program to illustrate runtime polymorphism using virtual functions. (7M)
b) How to create a virtual destructor? What is the necessity of making it virtual?
(7M)

6. a) Write a program using try block to detect and throw an exception if the condition" divide-by-zero" occurs.
(7M)
b) How can template be used for generic programming?
(7M)

7. What is a container? Give the comparison of various containers used in STL programming.
(14M)
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