

SH-III/BCA-303/19

BCA 3rd Semester (Honours) Examination, 2019-20
BACHELOR OF COMPUTER APPLICATION

Course ID :

Course Code : BCA-303

Course Title : Object Oriented Programming using C++

Time: 4 Hours

Full Marks : 80

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group-A

1. Answer all the questions: 1×10=10

- (i) The explicit keyword is an optional decorations for the constructors that takes exactly _____ arguments.
- (a) No
 - (b) Two
 - (c) Three
 - (d) One
 - (e) None of the above
- (ii) Which of the following statements are not true about destructor?
- (a) It is invoked when object goes out of the scope.
 - (b) Like constructor, it can also have parameters.
 - (c) It can be virtual.
 - (d) It bears same name as class name and precedes a tilde (~) operator (sign).
 - (e) None of the above
- (iii) Assume class test which of the following statements is/are responsible to invoke copy constructor?
- (a) Test T2(T1)
 - (b) Test T4=T1
 - (c) T2=T1
 - (d) Both (a) and (b)
 - (e) None of the above
- (iv) A constructor does not have any parameters is called _____ constructor.
- (a) Custom
 - (b) Dynamic
 - (c) Static
 - (d) Default
 - (e) None of the above

- (v) Which of the following are true about constructors?
 - (a) A class can have more than one constructors.
 - (b) They can be inherited.
 - (c) Their address can be returned.
 - (d) Constructors cannot be declared in protected section of the class.
 - (e) Constructors cannot return values.

- (vi) If default constructor is not defined then how the objects of the class will be created?
 - (a) The compiler will generate error.
 - (b) Error will occur at run time.
 - (c) Compiler provides its default constructor to build the object.
 - (d) All of the above
 - (e) None of the above

- (vii) Which of the following type of class allows only one object of it to be created?
 - (a) Virtual class
 - (b) Abstract class
 - (c) Singleton class
 - (d) Friend class
 - (e) None of the above

- (viii) Which of the following is not type of constructor?
 - (a) Copy constructor
 - (b) Friend constructor
 - (c) Default constructor
 - (d) Parametarized constructor
 - (e) None of the above

- (ix) How many instances of an abstract class can be created?
 - (a) 1
 - (b) 5
 - (c) 13
 - (d) 0
 - (e) None of the above

- (x) Which of the following is an abstract data type?
 - (a) int
 - (b) double
 - (c) string
 - (d) class
 - (e) None of the above

Group-B

2. Answer *any ten* questions: 2×10=20
- (i) What is C++?
 - (ii) What is class?
 - (iii) What is function?
 - (iv) What is function overloading?
 - (v) Define implicit and explicit type conversion.
 - (vi) What is encapsulation?
 - (vii) What is message passing?
 - (viii) List down the application of OOP.
 - (ix) What is in line function?
 - (x) Define Enumerated data type.
 - (xi) What is abstract data type?
 - (xii) Write down the difference between while and do-while loop.
 - (xiii) Explain Public visibility.
 - (xiv) Write down the differences between Constructor and Destructor.
 - (xv) Define Polymorphism.

Group-C

3. Answer *any four* questions: 5×4=20
- (i) Write a class template to implement stack in C++. 5
 - (ii) State the difference between C and C++. 5
 - (iii) When I write a destructor, do I need to explicitly call the destructors for my member object? 5
 - (iv) Is there any different between List X and List X(): ? 5
 - (v) What do you mean by dynamic initialization of objects? Why do we need to do this? 3+2=5
 - (vi) (a) What are objects? How are they created?
(b) How is a member function of a class defined? 2½+2½=5

Group-D

4. Answer *any three* questions: 10×3=30
- (i) Write a program to check working of constructor and destructors in multiple inheritance. 10
 - (ii) (a) But operator overloading makes my class look ugly; is not it supposed to make my code clearer?
(b) What are some examples of operator overloading? 6+4=10
 - (iii) (a) What is the difference between $\text{int} * f()$ and $\text{int}(* f)()$?
(b) Write down the effect of $* P + +$ where P is a pointer to integer
(c) What is the difference between parameter and argument? 3+3+4=10

- (iv) (a) What is the difference between class and structure?
 - (b) What is difference between `realloc ()` and `free ()`?
 - (c) Explain public, private and protected access specifier with example. 3+3+4=10

 - (v) (a) What is the difference between operator `new` and `new operator`?
 - (b) What happens to the member function in the class when copy constructor is invoked?
 - (c) What is the difference between block structured language and highly block structured language?
 - (d) How you will detect if there is memory leak in your C++ program. 4+2+2+2=10

 - (vi) Write short notes on *any two*: 2×5=10
 - (a) Exception handling
 - (b) History of C++ language
 - (c) Memory holes
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