



HDC-003-001312 Seat No. _____
Second Year B. Sc. (Sem. III) (CBCS) Examination
November/December – 2017
CA-301 : Data Structure & OOP with C++
(Old Course)

Faculty Code : 003
Subject Code : 001312

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- 1 Attempt the following : **20**
- (1) Which operator cannot be overloaded ?
 - (2) Which function is invoked automatically each time when an object is destroyed ?
 - (3) Which access specifier used to allow members of a class to be accessible in the derived class but not publicly in main ?
 - (4) malloc() returns _____ if its fails to allocate memory.
 - (5) At which of the following position, new value should be added to queue ?
 - (6) For accessing a structure element using a pointer, we must use _____ operator.
 - (7) If TOS = -1, then it means ?
 - (8) Which members of class are accessible without creating object?
 - (9) Which members are shared among all the objects of the class ?
 - (10) Who is blue print of object ?
 - (11) ++ Operator falls under which operator ?
 - (12) In C++, a function declared in a class is called ?
 - (13) The data members in a class of C++ is by default _____ members of the class.
 - (14) Who can have access to data members of more than one class ?
 - (15) A term push and pop is related to ?

- (16) In a circular queue, when front = MAX-1 and rear is same as front, will it store new value if we try to insert ? True or False ?
- (17) Linked List is a _____ Data Structure.
- (18) malloc() belongs to which header file ?
- (19) If start = NULL in linked list then linked list is ?
- (20) Who is called compile time polymorphism ?

- 2** (a) Attempt any three out of following : **6**
- (1) What is default argument ? Define.
 - (2) Define the term Inheritance.
 - (3) Define abstract class.
 - (4) Define reference variable.
 - (5) What is FIFO ? Define.
 - (6) What is malloc() ?
- (b) Attempt any three out of following : **9**
- (1) Discuss limitations of queue.
 - (2) What is DMA ? How it allocates memory ?
 - (3) Differentiate : Stack v/s Queue.
 - (4) What is data structure ? List out all data structure.
 - (5) List out types of inheritance. Explain any three.
 - (6) Differentiate : Constructor v/s Destructor
- (c) Attempt any two out of following : **10**
- (1) Write a note on doubly linked list and explain its structure.
 - (2) Explain stack in detail.
 - (3) What is queue ? Explain all the operations of queue.
 - (4) List out file opening mode. Implement a program to copy a file.
 - (5) Write a note on friend function.
- 3** (a) Attempt any three out of following : **6**
- (1) Define virtual function.
 - (2) Define inline function.
 - (3) Define object.
 - (4) Define encapsulation.
 - (5) Explain cascading operators.
 - (6) What is polymorphism ?

- (b) Attempt any three out of following : **9**
- (1) Give difference : Private and Public
 - (2) List out types of constructors.
 - (3) Explain any three operations on stack.
 - (4) Explain all visibility modifiers.
 - (5) Explain new and delete.
 - (6) List out all available functions of stream and explain any two.
- (c) Attempt any two out of following : **10**
- (1) Explain use of this pointer with an example.
 - (2) Write a note on Operator overloading.
 - (3) Implement UDF to insert new value at first position and delete from last for Doubly Linked List.
 - (4) How constructor works in inheritance ? Explain it with an example.
 - (5) What is class ? Explain it with an example.
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