

**B.C.A DEGREE END SEMESTER EXAMINATION - MARCH/APRIL 2019**  
**SEMESTER – 2: BACHELOR OF COMPUTER APPLICATION (BCA) (CORE COURSE)**  
**COURSE: 16U2CRBCA5, OBJECT ORIENTED PROGRAMMING WITH C++**

*(Common for Regular 2018 admission and improvement/supplementary 2017/ 2016 admission)*

Time: Three Hours

Max. Marks: 75

**PART A**

***Answer all questions***

1. What is a Class?
2. What is encapsulation?
3. Write the name of the header files to which the following belong: (i) strcat() (ii) atoi()
4. What is the use of typeid?
5. What is the use of malloc()?
6. What is a friend function?
7. What is an abstract class?
8. What are exceptions?
9. What is the purpose of default clause in a switch statement?
10. How cout and puts differ from each other? (1 x 10 = 10)

**PART B**

***Answer any eight questions***

11. Differentiate between Run time error and Syntax error. Also give suitable examples of each in C++?
12. How are abstraction and encapsulation interrelated?
13. What is a constructor? Explain any two properties.
14. Differentiate ios::app and ios::out.
15. What are the classes used for file I/O?
16. List out the different reasons that cause exceptions?
17. What is pure virtual function?
18. Differentiate between public and protected visibility in context of Object Oriented Programming.
19. What is inline function?
20. What are the different modes in which a file can be opened? (2 x 8 = 16)

**PART C**

***Answer any five questions***

21. Explain function overloading with suitable example.
22. Discuss various types of storage classes.
23. List out applications of OOPs.

24. What are the advantages of an inline function over a macro? Explain with an example program?
25. What are the advantages of passing function arguments by reference over passing by value? Illustrate with example?
26. Mention about Static member function with suitable example.
27. Demonstrate unary operator overloading with example. (5 x 5 = 25)

### PART D

#### *Answer any two questions*

28. Explain about the Object Oriented Programming? Describe the characteristics of OOPs.
29. Define a class Travelplan in c++ with the following descriptions:

Private Members:

Plancode                      of type long  
 Place                         of type character array(string)  
 Number\_of\_travellers      of type integer  
 Number\_of\_buses            of type integer

Public Members:

A constructor to assign initial values of plancode as 1001, places as "Agra", Number\_of\_travellers as 5, Number\_of\_buses as 1

A function Newplan() which allows user to enter Plancode, Place and Number\_of\_travellers.

Also, assign the values of Number\_of\_buses as per the following conditions:

Number of Travellers	Number of Buses
Less than 20	1
Equal to or more than 20 and less than 40	2
Equal to 40 or more than 40	3

A function showplan() to display the content of all the data members on screen.

30. Explain Inheritance? Differentiate between different levels of Inheritance with an example program?
31. What is constructor? Explain different constructors with suitable examples. (12 x 2 = 24)

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