

**BACHELOR OF COMPUTER APPLICATIONS  
(BCA) (Pre-Revised)**

01733 **Term-End Examination**

**June, 2015**

**CS-72 : C++ AND OBJECT ORIENTED  
PROGRAMMING**

*Time : 2 hours*

*Maximum Marks : 60*

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**Note :** *Question number 1 is compulsory. Attempt any three questions from the rest. All examples must be in C++ programming language only.*

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1. (a) List the pros and cons of object oriented programming over structured programming. 5
- (b) Explain data hiding and data encapsulation with the help of an example. 5
- (c) Create a class Employee containing data members as Emp\_name, Emp\_code, Designation, Date\_of\_joining, Age and Monthly\_salary.  
Include member functions to accomplish the following :
  - (i) Design a constructor to automatically generate Emp\_code for the Employees.
  - (ii) Accept Employee details from the user.

- (iii) Calculate the Employee experience in the company from his/her Date\_of\_joining.
- (iv) Calculate the income tax per year paid by the Employee as follows :

<i>Total Yearly Salary</i>	<i>Income Tax</i>
< 2 Lakhs	Nil
2 Lakhs < Total Yearly Salary ≤ 5 Lakhs	10% of Total Yearly Salary
5 Lakhs < Total Yearly Salary ≤ 10 Lakhs	20% of Total Yearly Salary
10 Lakhs < Total Yearly Salary	30% of Total Yearly Salary

Write appropriate member function for the above. Make and state suitable assumptions, if any. 10

- (d) What is Private, Public and Protected inheritance in C++ ? Give an example of protected inheritance. 5
- (e) What is a class diagram ? Explain with suitable example. 5
2. (a) What is dynamic binding ? How does it differ from static binding ? 5
- (b) Write a C++ program to overload \* operator to multiply two complex numbers. 5

3. (a) Write five features for C# (C Sharp) programming language. 5
- (b) What is a friend function in C++ ? Explain with an example. 5
4. (a) Explain Equality, Relational, Logical, Assignment and Comma Operator of C++. 5
- (b) What is an activity diagram ? When is it used ? 5
5. Explain the following with the help of an example each :  $4 \times 2 \frac{1}{2} = 10$
- (a) Exception Handling
- (b) Polymorphism
- (c) Break and Continue Statement
- (d) Templates
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