BACHELOR OF COMPUTER APPLICATIONS (Pre-revised)
(BCA)
Term-End Practical Examination

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June, 2017

CS-72(P)/S3 : C++ AND OBJECT ORIENTED PROGRAMMING

Time : 2 Hours   *Maximum Marks : 100*
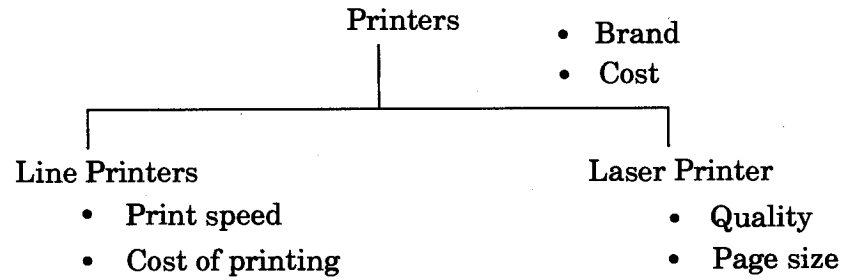
(Weightage : 15%)

Note :   (i)   *There are two **compulsory** questions in this paper carrying 40 marks each. Rest 20 marks are for viva-voce.*

(ii)   *You must write appropriate main( ) function and test your programs.*

(iii) *Write/print your programs, input and results on your answer-sheet.*

(iv)   *Make and state suitable assumptions, if any.*

1.   Design and implement a class "ResearchStudent" using C++. The class should have the following features :

   •   It should have student name, research topic, research area and research guide name as the data members of the class.

   •   It should have the following member functions :

   (a)   A function that inputs the values into the data members of an object.

   (b)   A function that displays the values stored in the data members of the object.

   (c)   A function that displays the research topic of the object if research area is "OOPS".

   Write appropriate main( ) function that creates an array of three objects of the class "ResearchStudent". The main( ) function should demonstrate all the functions of the given class. The data stored in the objects should be meaningful.   *40*

2. Consider the following class hierarchy along with suggested data members :

```
                    Printers        • Brand
                       |            • Cost
        _____
        |                                     |
   Line Printers                         Laser Printer
     • Print speed                          • Quality
     • Cost of printing                     • Page size
```

Design and implement the classes in the hierarchy using C++. You may add more data members, if needed. You should include at least one constructor in each class. All classes should have a member function print_info( ) that should display all the information of object of that class. You must demonstrate polymorphism using the print_info( ) and main( ) functions. *40*

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