

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

**Term-End Practical Examination**

**December, 2015**

000009

**CS-72(P)/S4 : C++ AND OBJECT ORIENTED PROGRAMMING**

*Time : 2 Hours*

*Maximum Marks : 100*

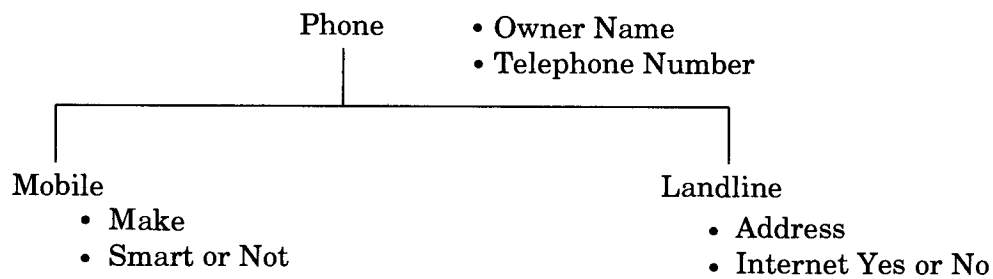
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- Note :**
- (i) *There are two **compulsory** questions in this paper carrying 40 marks each. Rest 20 marks are for viva-voce.*
  - (ii) *You must write appropriate main( ) function and test your programs.*
  - (iii) *Write/print your programs, input and results on your answer-sheet.*
  - (iv) *Make and state suitable assumptions, if any.*
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1. Design and implement a class "Window" using C++. The class should have Window ID, size, background colour, topmost location as data members. You may add more data members. The class should have three member functions :
  - First member function to input information into data members of an object.
  - Second member function to display information stored in an object.
  - Third member function accepts a parameter value colour and changes the data member background colour for that object.

Write appropriate main( ) function which creates five "Window" objects in an array. Your main( ) function must demonstrate all the member functions. 40

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



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

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