

POKHARA UNIVERSITY

Level: Bachelor

Semester: Spring

Year : 2017

Programme: BE

Full Marks: 100

Course: Object Oriented Programming in C++

Pass Marks: 45

Time : 3hrs.

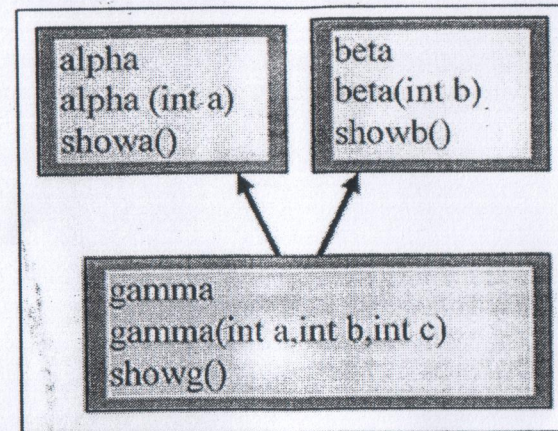
Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) What are shortcomings of procedural oriented programming? Explain the notion of "everything is an object" in object oriented programming. 7
- b) Differentiate between the concept of computation as simulation and responsibility implies non-interference. 8
2. a) What is responsibility driven design? Draw a CRC Card of student. 7
- b) What is encapsulation? How can encapsulation be enforced in C++? Explain with suitable code. 8
3. a) What is constructor? Write an example of copy constructor and explain each line of code. 8
- b) Create a class time a constructor having hour, minute and second as an arguments is use to take two time data from user. The add function that takes two class objects an arguments adds them respectively then display aggregate result? (Apply 60 second=1 minutes and 60 minutes= 1 hour). 7
4. a) Why is destructor function required in class? Can a destructor accept arguments? 7
- b) What is inheritance? Explain different forms of inheritance. 8
5. a) How does visibility mode control the access of members in the derived class? Explain with an example. 7

b) Write a complete program with reference to the given figure.



6. a) What are generic and templates? Create a template to find the sum of two integers and floats. 8
- b) Write a complete program to convert the polar co-ordinates into rectangular coordinates. 7
(hint: polar co-ordinates (radius, angle) and rectangular co-ordinates (x,y) where $x = r \cdot \cos(\text{angle})$ and $y = r \cdot \sin(\text{angle})$).
7. Write short notes on: (Any two) 2×5
 - a) Friend function
 - b) Pure polymorphism
 - c) Expectation mechanism