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B.Sc. (Hons. Math) (Semester – 3rd)
OBJECT ORIENTED PROGRAMMING
Subject Code: BCAP1305
Paper ID: 18131215

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

- Q1. Attempt the following:
- a) What is Encapsulation? Show with an example, how a program code can be encapsulated.
 - b) Name any two tokens with example of each.
 - c) Write any two differences between constructor and destructor.
 - d) How can you make a member function private in a class? What is the purpose of making class members private?
 - e) Can an array be declared dynamically? If yes, how? If no, why not?
 - f) Write a simple C++ program to calculate area of rectangle.
 - g) How you can read and write from a file in C++.
 - h) What do you mean by code reusability?
 - i) What is Inheritance? How class properties can be inherited from another class?
 - j) Write the application and syntax of (i) sizeof() operator (ii) pow() function.

Section – B

(5 marks each)

- Q2. Write a C++ program using classes and objects to find the largest element in an array.
- Q3. Write major differences between function overloading and function overriding? Support your answer by writing a C++ code.
- Q4. Explain the while and do while loop with syntax and example.
- Q5. What is a friend function? How operator overloading can be done with friend function?
- Q6. How is multiple inheritance different from multilevel inheritance. Write syntax of both.

Section – C

(10 marks each)

- Q7. What are the four pillars of Object-Oriented Programming? Discuss in details. Write a C++ code to show the working of each of the pillar.
- Q8. Discuss four kinds of inheritance. How the private, public and protected members are inherited. Provide examples to support your answer.
- Q9. How polymorphism can be achieved? What is the relation of polymorphism with pointers. What is early and late binding. Also, discuss various types of base classes.