USN | | | | | | | | | | |

13MCA22

Second Semester MCA Degree Examination, Dec.2016/Jan.2017
Object Oriented Programming using C++

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions.***

1 a. What is object oriented programming? Explain the following term with examples : i) objects ii) inheritance iii) polymorphism iv) encapsulation. **(10 Marks)**

b. How are the object oriented programming different form procedure oriented programming. **(05 Marks)**

c. What is inline function? Explain with an example. **(05 Marks)**

2 a. What is function template? Write a function template to swap contents of two reference variables and to use two int variables and char variables as parameters to swap functions. **(08 Marks)**

b. Describe the significance of static data members and static functions with example. **(07 Marks)**

c. What is copy constructor? Explain with example. **(05 Marks)**

3 a. List rules for overloading of operators. **(05 Marks)**

b. Explain the following with example : i) friend function ii) friend class **(08 Marks)**

c. Explain how delete and new operators manage memory allocation dynamically. Explain with a C++ program to demonstrate these operators. **(07 Marks)**

4 a. What are virtual base classes? When do you need virtual base class in C++ program? Explain with an example. **(10 Marks)**

b. What is inheritance? Explain with general syntax. **(4 Marks)**

c. How do you pass arguments to a constructor of a base class? Explain with an example. **(06 Marks)**

5 a. Write a C++ program to a create class called STUDENT with data members USN, name and age, using inheritance crate the class UF–Student and PF–student having fields as semester, find the sum of fees collected for all UG and PG students separately. **(10 Marks)**

b. What is operator overloading? Write a C++ program to overload [ ] operator. **(05 Marks)**

c. What is the advantage of using array of pointer objects in C++? Explain. **(05 Marks)**

6 a. What are abstract classes in C++? How can we achieve runtime polymorphism? **(05 Marks)**

b. Define early binding and late binding? Explain each of them with an example. **(08 Marks)**

c. What is a virtual function? What are the rules that need to be kept in mind in deciding virtual functions. **(07 Marks)**

7 a. What are iostreams? Explain the stream class hierarchy with a neat diagram. **(10 Marks)**

b. Define the following with examples : i) seekg ii) seekP iii) tellg iv) tellP v) fill vi) width. **(10 Marks)**

8 a. What do you mean by exception handling? Explain how multiple catch statement can be used in exception handling in C++? **(08 Marks)**

b. Write a short not eon standard template library container classes. **(06 Marks)**

c. Describe terminate ( ) and unexpected ( ) functions with syntax and examples. **(06 Marks)**

* * * * *