

Reg. No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Question Paper Code : 27299**

**5 Year M.Sc. DEGREE EXAMINATION, MAY/JUNE 2016**

**Third Semester**

**Software Engineering/Software Systems**

**ESE 032 – OBJECT ORIENTED PROGRAMMING AND C++**

**(Regulations 2010)**

**Time : Three Hours**

**Maximum : 100 Marks**

**Answer ALL questions.**

**PART – A (10 × 2 = 20 Marks)**

1. Compare encapsulation and data abstraction.
2. Differentiate integral and float expressions with an example.
3. What do you mean by in-line function ?
4. What is an abstract class ?
5. What is copy constructor ?
6. List the rules for overloading operators.
7. What is the difference between `char a[ ] = ? string ? ;` and `char *p = ? string ? ; ?`
8. What is Pure virtual function ?
9. Differentiate input and output streams.
10. Write the syntax of get and put functions.

**PART – B (5 × 16 = 80 Marks)**

11. (a) Write a program to perform the following using SWITCH CASE :
- (i) Generate prime numbers between X and Y
  - (ii) Sum of the numbers between X and Y which are divisible by 3.
- OR**
- (b) Write a program to perform the following using IF-ELSE :
- (i) Count the vowels in a given string
  - (ii) Convert the given string from uppercase to lowercase.
12. (a) (i) Compare and contrast between friend function and virtual friend class with an example. (6)
- (ii) Write a C++ program to demonstrate the friend class, friend function and virtual function. (10)
- OR**
- (b) (i) Write detail note on class template and abstract class with an example. (8)
- (ii) Write a C++ program to demonstrate the array of object with an example. (8)
13. (a) Explain the following :
- (i) Overloading unary operators with an example (8)
  - (ii) Overloading binary operators with an example. (8)
- OR**
- (b) Explain the type conversion with an example in C++ programming. (16)
14. (a) Write a program for a country using inheritance with the following details. Country is a base class having protected data details of member (country name, No of states, capital). Country has a derived class state with data member (state name, Major industry, population) State has a derived class village with data member function getdata() and disp() to get the (Village name, Population). Display the details of the country with no of states and villages. Also find it's population ratio. (16)
- OR**
- (b) (i) Define polymorphism. Describe the Pros and Cons of using polymetric in object oriented programming with simple example. (8)
- (ii) What is the role of Virtual function in late binding ? Explain it with proper example. (8)
15. (a) Explain the stream classes used for console I/O operations.
- OR**
- (b) Write a C++ program to read / write objects from the disk file.