

(Following Paper ID and Roll No. to be filled in your Answer Books)

Paper ID : 110403

Roll No.

B.TECH.

Theory Examination (Semester-IV) 2015-16

OBJECT ORIENTED PROGRAMMING WITH C++

Time : 3 Hours

Max. Marks : 100

Note: Attempt questions from all sections as per instructions.

Section-A

1. Attempt all parts of this question. Each question carries 2 marks. (2×10 = 20)

- (a) Differentiate between link and association.
- (b) What is an abstract class? Is it possible that an abstract class is inherited by another class?
- (c) Draw a state diagram for electric bulb.
- (d) When do we use the protected visibility specifier to a class member?

- (e) When will you make a function inline? Why?
- (f) Define Destructor. Why do we use a destructor in a program?
- (g) What is the use of Scope resolution operator?
- (h) What is a Candidate key?
- (i) What is the use of friend function in C++?
- (j) Write the name of the function in C++ used for opening a file for input only?

Section-B

2. Attempt any five parts of this question. Each question carries 10 marks. [5×10=50]

- (a) What is a Constructor? Write down the different characteristics of a constructor. Write a program in C++ for Constructor Overloading .
- (b) What is an inline function ? Why do we use inline functions in our program? Write a program in C++ for inline function.
- (c) Explain object oriented programming. What are the main advantages of object oriented programming over procedural programming? Write a program in C++ by

creating a class integer and write a function that prints all the Prime numbers from the class.

- (d) Explain all basic concepts of object oriented programming
- (e) What is an inheritance? Explain the different types of it .Write a program in C++ for Multiple inheritance.
- (f) What is operator overloading? Write a program in C++ for binary operator overloading.
- (g) What is UML? List all building blocks of UML. Explain all types of things used in UML
- (h) Explain formatted and unformatted I/O operations in detail.

Section-C

Attempt any two parts:

(2×15=30)

- 3. (i) What is polymorphism? Differentiate between runtime polymorphism and compile time polymorphism.
 - (ii) What are the relation between functional, object and dynamic model?
4. A farmer want to cross the river in a boat along with a bag of grass, a goat and a lion. Only one thing can be carried in the

boat at a time. If the goat is left alone with the grass the grass will be eaten. If the goat is left alone with the lion, the goat will be eaten.

- (i) Prepare a scenario in which everything is safely transported across the river.
 - (ii) Prepare the event trace diagram for the above problem.
- 5.
- (i) Discuss the term multiplicity and quantification with suitable examples.
 - (ii) Explain generalization, aggregation and association in detail.

