B.Tech. (Sem. III) (Main/Back) Examination, January - 2012
Production & Industrial Engg.
3PI5 Object Oriented Programming in C++
(Common for ME/AE)

Time : **3** Hours]   [Total Marks : **80**
[Min. Passing Marks : **24**

Instructions to Candidates :

*Attempt any **five questions** selecting **one question** from each unit. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Use of following supporting material is permitted during examination. *(Mentioned in form No. 205)*

1._____**Nil**_____   2._____**Nil**_____

UNIT – I

1   State the difference between following :
(a)   Class and object.
(b)   Class in C++ and structures in C.
(c)   Functional programming and OOPS.
(d)   Compiler of C and C++.

                                                                                    4×4

OR

1   (a)   What do you understand by polymorphism? Explain it's types and how it is achieved in C++. Also discuss it's advantages.
                                                                                    10

(b)   Explain the need of data hiding and how it is done in C++.
                                                                                    6

UNIT – II

2   What is dynamic memory allocation? How it is done in C++ ? Write suitable C++ code for allocation and deallocation of memory, dynamically.

                                                                                    16

OR

2 State the difference between following with suitable code :

(a) Macro and inline function

(b) Function and operator overloading.

8×2

UNIT – III

3 Write a C++ program and do following :

(i) Create a class employee.

(ii) In main program create object's of class employee.

(iii) Count and display Number of objects created.

16

OR

3 Explain following with code :

(a) Friend function. 3

(b) Constructor overloading. 3

(c) Protected class members. 3

(d) Runtime polymorphism. 4

(e) Abstract base class. 3

UNIT – IV

4 What are container classes ? Write code to define any container class using class Templates.

16

OR

4 Discuss stream classes that performs file I/O. Also discuss file opening modes.

16

UNIT – V

5 Write a C++ code to implement a Node of doubly link list. Also discuss self referential pointers.

16

OR

5 Write short notes on following :

(a) Stack and it's practical use. 6

(b) Priority Queue. 6

(c) Linear V/s Nonlinear data structures. 4