Faculty of Engineering and Technology

Third Semester B.E (Electronics Engg.) /E&T/E&C (C.B.S.) Examination

OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURE

Time : Three Hours]   [Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Due credit will be given to neatness and adequate dimensions.

(3) Assume suitable data wherever necessary.

(4) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) Describe with examples, the uses of enumeration data types.   6

    (b) What is reference variable ? What is its major use ?   4

    (c) Why does C++ having type modifiers ?   3

OR

2. (a) Explain the benefits and application of OOP's. 6

   (b) Write short note on dynamic memory allocation and de-allocation. 7

3. (a) What is an operator function ? Describe the syntax of an operator function. 5

   (b) Why is it necessary to overload an operator ? 4

   (c) What is conversion function ? How is it created ? Explain its syntax. 4

4. (a) Explain binary operator overloading with an example. 7

   (b) Define a class string. Use overloaded = = operator to compare two strings. 6

5. (a) What are different forms of inheritance ? Give an example of each. 8

   (b) What is containership ? How does it differ from inheritance ? 6

OR

6. (a) Class D is derived from Class B. The Class D does not contain any data members of its own. Does the Class D requires constructors ? If yes, why ? 7

(Contd.)

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(b) When do we make a virtual function "Pure ?" What are the implications of making a function a pure virtual function ?   7

7. (a) Explain radix sort with the help of suitable example.   7

   (b) Write a program to implement linear search technique.   6

OR

8. (a) Write a program to implement selection sort technique.   7

   (b) Explain Quick sort with the help of an example.   6

9. (a) Write a program to add and delete a node in singly linked list.   7

   (b) Define Queue. Also explain various operations allowed on Queue.   6

OR

10. (a) Write a program to implement a stack using list.   9

    (b) Write a short note on dynamic memory allocation.   4

11. (a) Write a program to implement a simple Binary tree.   7

(b) Discuss implementation of binary trees using array.

7

OR

12. (a) Explain threaded Binary trees with an example.

7

(b) Explain Inorder, Preorder and Postorder Traversal of a binary tree.   7