

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE  
 Second Semester B.Sc Computer Science Degree Examination, March 2017  
 BCS2B02 – OOP Concepts and Data Structures Using C++  
 (2016 Admission onwards)

Max. Time: 3 hours

Max. Marks: 80

**SECTION- A**

(Answer ALL questions.)

1. Another term for \_\_\_\_\_ is information hiding.
2. The term \_\_\_\_\_ refers to a way of organizing classes that share properties.
3. \_\_\_\_\_ means that two or more methods can have different names in the same way that an English word can have two or more meanings.
4. A \_\_\_\_\_ method is a method that can be invoked using the class name instead of an object name.
5. & , - known as \_\_\_\_\_ operator.
6. Give an example for homogeneous data structure.
7. The type of the pointer variable is \_\_\_\_\_.
8. List any two applications of Linked list .
9. Post- fix form of the infix expression  $a+b*c-d$  is \_\_\_\_\_.
10. In average case, insertion sort has time complexity in the order of \_\_\_\_\_.

(10 x 1 = 10 Marks)

**SECTION- B**

(Answer all questions. Each question carries 2 marks)

11. Write any four features of OOPS.
12. What is meant by Inline function? Explain.
13. Define Stack. Give two applications of stack.
14. Explain hashing with an example.
15. Compare array with linked list.

(5 x 2 = 10 Marks)

**SECTION - C**

(Answer any five questions. Each question carries 4 marks)

16. Write a C++ program to add two polynomials.
17. Explain Class and Object.
18. What is parameterized constructor? Explain.
19. What is the use of Scope Resolution Operator in a C++ Program?
20. Write a note on bubble sort.
21. With a suitable example explain the representation of arrays in memory.
22. Give algorithms to implement push and pop operations in stack.
23. Differentiate linear search and binary search.

(5 x 4 = 20 Marks)

SECTION- D

(Answer any five questions. Each question carries 8 marks)

24. What is inheritance in C++? Explain different types of inheritance.
25. What is polymorphism? Explain with suitable example.
26. Differentiate function overloading and operator overloading.
27. Write a C++ program to implement queue using an array.
28. Differentiate linear queue and circular queue.
29. Explain various Hashing methods in detail.
30. Explain binary search algorithm with a suitable example.
31. Write a program for Insertion sort. Perform insertion sort on the data given. Show each step 71 17 86 100 54 27.

(5 x 8 = 40 Marks)

28

25

21