

Reg. No. :

D 42

**Q.P. Code : [07 DSCA 06/
07 DSC 06]**

(For the candidates admitted from 2007 onwards)

B.C.A./B.Sc. DEGREE EXAMINATION,
DECEMBER 2010.

Second Year

Part III — Computer Application/Computer Science

SOFTWARE ENGINEERING

Time : Three hours Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

1. What are the various steps involved in software engineering? Elaborate the steps.
2. Discuss the concept of staffing – level estimation.
3. Explain the modules and modularization criteria in software design in detail.
4. Describe the different coding styles.

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5. Discuss in detail about :
 - (a) Walkthroughs and Inspections
 - (b) Quality Assurance
 - (c) System Testing
 - (d) Unit Testing and Debugging.
6. Explain in detail about configuration management.
7. Narrate the Algorithmic cost models.
8. Explain any two Design Techniques followed in software design.

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B.C.A. DEGREE EXAMINATION, DECEMBER 2010.

Second Year

Part III — Computer Applications

PROGRAMMING WITH C AND C++

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. (a) Explain the data types in C.
 - (b) Discuss the evaluation of expressions with examples.
 - (c) Explain the 'for' and 'while' looping structures with examples. (5 + 7 + 8)
2. Write a function to receive a matrix and to print the elements, if any, which are column minimum and row maximum. Also write the main function to read the matrix and to pass it to a function.

3. (a) Bring out the differences between a 'structure' and a 'union'.
(b) Write a C program to read an array of numbers and to print the even numbers only by using pointers. (10 + 10)
4. Explain the following with respect to C++ :
(a) Friend function
(b) Inline function
(c) Copy constructor. (8 + 6 + 6)
5. (a) Discuss the overloading of many operator with example.
(b) What is meant by polymorphism? Explain it with an example. (8 + 12)
6. Write a C++ program to create a class for representing a "tube light" with suitable properties and methods. Also write the main function to create an object and to store the information about a tube light in the examination hall.
7. (a) What is a template? Explain.
(b) Discuss the stream classes in C++. (10 + 10)
8. (a) Explain the 'new' and 'delete' operators in C++.
(b) Discuss the hierarchical inheritance with suitable example. (8 + 12)

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B.C.A. DEGREE EXAMINATION, DECEMBER 2010.

Second Year

Part III — Computer Applications

DATA STRUCTURES AND ALGORITHMS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

(5 × 20 = 100)

1. (a) Explain the phases of creating Programs.
(b) Describe the following :
 - (i) Algorithm
 - (ii) Data structure
 - (iii) SPARKS. (14 + 6)
2. Explain the evaluation of Postfix expression with an example and describe the use of stack.
3. Explain the representation of singly linked list and doubly linked list with examples.

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4. Write a note on the following : (5 + 5 + 5 + 5)
 - (a) Storage pool
 - (b) Sparse matrices
 - (c) Dynamic storage management and
 - (d) Garbage collection and compaction.
5. (a) Write the algorithm for Fibonacci search.
(b) Write the algorithm for insertion sort. (10 + 10)
6. Discuss the methods of external sorting.
7. Explain the various Hashing functions.
8. Elaborate the various index techniques.

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B.C.A. DEGREE EXAMINATION, DECEMBER 2010.

Second Year

Part III — Computer Applications

OPERATING SYSTEMS

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions.

All questions carry equal marks.

(5 × 20 = 100)

1. Explain the objectives and functions of an operating system.
2. Explain the evolution of operating systems.
3. Explain the different categories of services provided by an operating system.
4. Explain the various methods for allocating disk space to files.

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5. (a) Explain the various states of a process. (6)
- (b) Explain the concept of context switching. (8)
- (c) Explain process state transitions. (6)
6. Explain in detail fixed partitioned memory management schemes.
7. Explain any five page replacement algorithms.
8. Explain the use of Remote Procedure calls.
