



BCA (Part II) EXAMINATION 2007
(C++ PROGRAMMING)

Max Time : 3 Hours
Max. Marks : 50

Attempt any five questions. All questions carry equal marks.

1. (a) Give the comparison between functional programming and oops approach.
(b) Explain with suitable example Reusability and overloading.
2. Explain the following in brief:
 - (i) Reference Variable;
 - (ii) Scope Resolution Operator;
 - (iii) Identifier;
 - (iv) Operators in C++
 - (v) Keywords.
3. (a) Explain the use of the following control statements:
 - (i) break
 - (ii) continue
 - (iii) goto
 - (iv) switch
(b) write a c++ program for generating Fibonacci series (using Recursion)
4. How are member functions defined? Explain them with suitable C++ program fragment.
5. Using C++ Program fragment differentiate between passing simple data types by value and by reference.
6. What is a Constructor? How is constructor function invoked? Give a suitable C++ program fragment, how constructor functions is invoked.
7. What is operator overloading? Write a C++ program for overloading the various arithmetic operators.
8. (a) Explain pure virtual functions.
(b) What is polymorphism and how is it achieved at compile-time and Run-time?
9. Write short notes on any four of the following:
 - (i) Operator overloading;
 - (ii) Dynamic memory allocation;
 - (iii) Friend function;
 - (iv) Function overloading
 - (v) Multiple Inheritance;
 - (vi) Structures.



BCA (Part II) EXAMINATION 2007
(COMPUTER GRAPHICS)

Max Time : 3 Hours
Max. Marks : 50

Attempt any five questions. All questions carry equal marks.

1. (a) What do you mean by hard copy devices? What is the difference between impact and non impact printers? How do a line printer and dot matrix printer work?
(b) Explain the working principle of mouse and light pen.
2. Write short notes on the following:
 - (a) Display processor;
 - (b) Refresh rate;
 - (c) Flat panel display device;
 - (d) Digitizer;
 - (e) Inkjet printer.
3. (a) Explain how virtual reality system can be used in design application for virtual reality system?
(b) What is the refresh buffer? Identity contents and organization of refresh buffer for the case of raster scan display and vector display device.
4. (a) What do you understand by scan conversion of lines? Write steps to draw a line using Bresenham's Algorithm; when $0 < m < 1.5$
(b) Explain the basic concepts of Midpoint Circle Algorithm. Write steps to scan convert a circle using Midpoint Circle Algorithm.
5. Write short notes on:
 - (a) Boundary-fill algorithm;
 - (b) Flood-fill algorithm.
6. Explain in details:
 - (a) 2D Rotation transformation with respect to origin
 - (b) 2D Scaling
7. (a) What is geometric and coordinate transformation?
(b) Explain Cohen-Sutherland line clipping algorithm in details.
8. (a) Explain Hidden line and surface elimination algorithm;
(b) Explain painter's algorithm



BCA (Part II) EXAMINATION 2007
(COMPUTER ORIENTED STATISCAL METHOD)

Max Time : 3 Hours
Max. Marks : 50

Attempt any five questions. All questions carry equal marks.

1. What is Statistics, describe in detail with suitable examples? Also write an explanatory notes on and distrust of statistics.
2. Explain the concept of correlation. Discuss the various types of correlation. Also explain the correlation coefficients.
3. Calculate mean, mode and median of the following marks distribution of 140 candidates:

Marks	Cumulative Frequency
10	140
20	133
30	118
40	100
50	75
60	45
70	25
80	9
90	2
100	0

4. What is Skewness? Find the Karl Pearson's coefficient of skew ness for the distribution:

Size	Frequency
0-10	10
10-20	12
20-30	18
30-40	25
40-50	16
50-60	14
60-70	5

5. What are the measures of skew ness? Also explain kurtosis and Dispersion.
6. (a) Find the likely price in Delhi corresponding to the price of Rs.70 at Bangalore from the following:

	Bangalore	Delhi
Average price	65	67
Standard deviation	2.5	3.5

Star Infotech College



Correlation coefficient between the prices of commodities in the two cities is 0.8.

(b) Explain the regression coefficient. Also describe its usage.

7. Determine correlation coefficient of the following data by the rank difference method;

A	B
80	15.3
91	20.1
52	16.1
71	15.2
94	19.1
89	17.8
50	15.2

8. Calculate Karl Pearson's coefficient of correlation from Age (in Years) of father and their sons:

Father	Sons
29	6
35	10
38	12
39	11
42	8
44	15
55	20
60	25
65	30
72	40
78	35

9. Write brief explanatory notes on the following:

- (i) Applied statistics
- (ii) Bowley's coefficient of skewness
- (iii) Fitting of regression lines
- (iv) Rank correlation
- (v) Degree of correlation

10. Price of a particular commodity in five years in two regions are below:

Region A	Region B
20	10
22	20
19	18
23	12
16	15

Examine in which region the price are stable. Also justify your method.



BCA (Part II) EXAMINATION 2007
(CLIENT-SERVER-TECHNOLOGY)

Max Time : 3 Hours
Max. Marks : 50

Attempt any five questions. All questions carry equal marks.

1. What is client server computing? Explain the need and motivation for client/server approach?
2. Explain various development tools of client/server technology and its advantages?
3. What is the role of a client? How a client requests for services to server?
4. Write shorts notes on any two of the following:
 - (a) DDE
 - (b) OLE
 - (c) COBRA
5. Explain the roles and functions of a server?
6. What is the different between two layer and three layer architecture?
7. Explain the use of API in client/server computing?
8. Draw OSI layers model and write functions of each layer?
9. Explain the various remote access protocols?
10. Write short notes on any two of the following:
 - (a) Firewall
 - (b) Encryption
 - (c) IPC



BCA (Part II) EXAMINATION 2007
(DATABASE MANAGEMENT SYSTEM)

Max Time : 3 Hours

Max. Marks : 50

Attempt any five questions. All questions carry equal marks.

1. (a) What is DBMS? Explain view of data. 5
(b) What is the role of administrator in DBMS? 5

2. (a) Explain the distinction among the terms primary key, foreign key, candidate key and super key.
(b) Construct an E-R diagram for a hospital with a set of patients and a set of medical doctors. Associate with each patient a log of the various tests and examination conducted. 4+6

3. (a) Explain the difference between physical and logical data independence.
(b) Write a short note on distributed database and client server architecture. 4+6

4. What is data model? Explain hierarchical, relational and network model in detail. 10

5. Write short notes on any four:
(i) Referential integrity
(ii) Serializability
(iii) Recovery Techniques
(iv) Concurrency control
(v) DCL commands 4x2.5

6. (a) What is locks? Explain deadlock condition.
(b) Show that the two phase locking protocol ensures conflict serializability and that transaction can be serialized according to their lock points. 5+5

7. For each of the following queries, give an expression in SQL:
employee (employee_name, street, city)
works (employee_name, company_name, salary)
company (company_name, city)
manages (employee_name, manager_name)

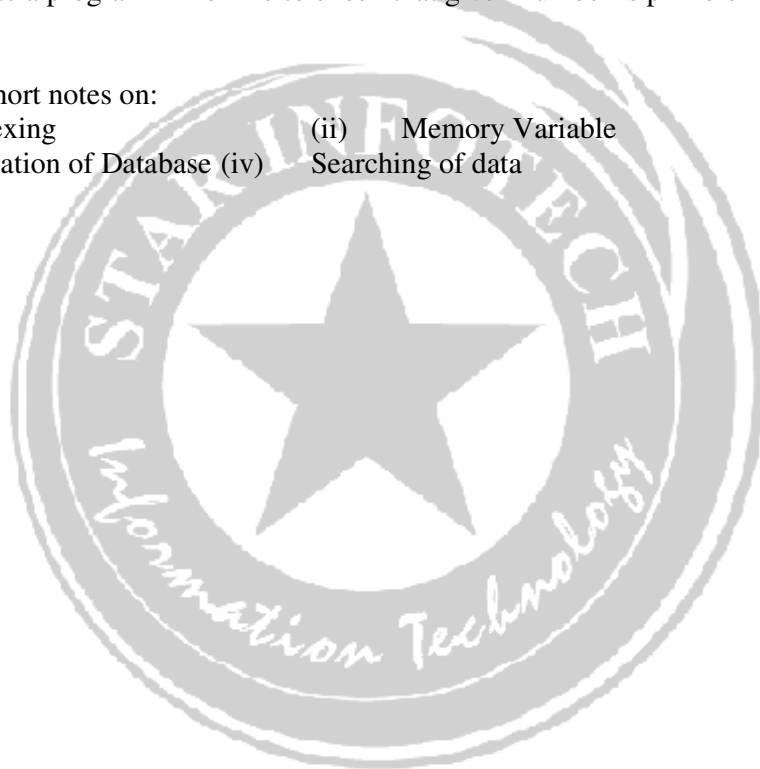
(a) Find the name of all employees who work for First Bank Corporation.
(b) Find the names and cities of residence of all employees who work for First Bank Corporation
(c) Find the names, street, address and cities of residence of all employees who work for First Bank Corporation and earn more than \$10000 per annum.



- (d) Find the names of all employees who earn more than every employee of Small Bank Corporation.
- (e) Find the names of all employees in this database who live in the same city as the company for which they work.

2+2+2+2+2

8. Differentiate with examples between
- (i) PACK and ZAP
 - (ii) @ SAY and @ GET
 - (iii) LTRIM and RTRIM
 - (iv) GATHER and SCATTER
 - (v) LIST and DISPLAY
9. (a) What is the difference between procedure and user define function? Explain in detail.
- (b) Write a program in FoxPro to check that given number is prime or not prime.
5+5
10. Write short notes on:
- (i) Indexing
 - (ii) Memory Variable
 - (iii) Creation of Database
 - (iv) Searching of data
- 2.5x4





BCA (Part II) EXAMINATION 2007
(JAVA PROGRAMMING)

Max Time : 3 Hours
Max. Marks : 50

Attempt any five questions. All questions carry equal marks.

- What are the characteristics of object oriented programming languages? Write a note on multiple inheritances.
 - What is an array? What are their types? Write a program in java to add two matrices

- What are different iteration statements of Java? Write a program in Java to print the salary of employees of an organization based on certain condition statements.
 - What is the concept of a class and objects? Write a note on stack class.

- What is the of a constructor and destructor? Write a note on method over-riding
 - Write a program in Java to find the root of a quadratic equation by using the Equation:

$$\text{roots: } \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

- What is the difference between a package and an interface? Write a note on exception handling.
 - Write a program in java to a word in reverse order i.e., JAIPUR should be printed like RUIPAJ
- What is an applet? Differentiate an applet and application. What are different stages in the life cycle of an applet?
 - What is a function? What are different types of functions available in Java?
- Explain the concept of a thread. What is multithreading? Write a note on thread priority.
 - What is AWT? Write a note on graphical tools available in Java.
- How is connectivity to a database made? Write a note on ODBC and COBRA products.
 - Discuss the structure of CGI. Draw RMI architecture.
- Write short notes on the following:
 - Java servlets and JavaBeans
 - Frame Windows.