



**B.Sc. (Part II) (Information Technology)
EXAMINATION, 2007**

**SYSTEM ANALYSIS AND DESIGN
(B.Sc. I.T.-22)**

Time allowed : Three Hours

Maximum Marks : 50

Attempt any Five question . All questions carry equal marks.

1. (a) Why is it difficult to determine user requirements ? Explain different strategies for user requirements . explain.
(b) Explain what you mean by system testing . Explain various types of Testing and trends in testing.
2. (a) What are some of the advantages of Top-down Design ? Elaborate.
(b) There are two ways of debugging program software : Bottom-up and Top-down . How do they differ ?
3. Draw the data flow diagram for the following :
(a) Railway Reservation System ;
(b) Hotel Management System .
4. Distinguish between the following :
(a) Data security and data integrity ;
(b) Privacy and Confidentiality ;
(c) Roll Forward and Roll Back ;
(d) Logical and Structural Failure ;
5. (a) Discuss the behavioral issues involved in understanding the Analyst / User interface . What do you mean by information gathering tools ? Explain each in detail.
(b) What do you mean by Management Information System ? What are its characteristics ?

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6. Explain the Following :

- (a) Case Tools
- (b) Disaster Recovery ;
- (c) Control audit of System ;
- (d) Online Transaction Processing System .

7. (a) Explain physical and logical design process of a system . Why is a system proposal so crucial for System Design ? Explain.

- (b) What do you mean by centralization and decentralization of MIS department ?

8. Distinguish between the following :

- (a) Brainstorming and Delphi Method ;
- (b) Validity and Reliability ;
- (c) Strategic and Operational Planning
- (d) Decision Table and Structured chart.





B.Sc. (Part II) (Information Technology)
EXAMINATION, 2007
CLIENT SERVER TECHNOLOGY
(B.Sc. I.T.-23)
Time allowed : Three Hours

Maximum Marks : 50

Attempt any Five question . All questions carry equal marks.

1. (a) What do you understand by client server computing ? explain the characteristics of client server computing (5)
 (b) Write down the advantages and disadvantages of client server computing. (5)
2. (a) What are the motivating factors for client server approach ? (5)
 (b) Write down the history of client server computing . (5)
3. (a) Explain various client server development tools (5)
 (b) What are various types of client server architecture ? Explain any one in detail (5)
4. (a) What do you mean by OLE and DDE ? (5)
 (b) What basic components are required for making client server computing system ? (5)
5. (a) Compare two layer architecture with three layer architecture (5)
 (b) Explain the use of APIs in client server computing (5)
6. (a) Explain various functions performed by server (5)
 (b) What do you understand by Network Operating System ? Explain any one in detail. (5)
7. (a) Explain OSI model with reference to client server computing. (5)
 (b) What do you mean by RDBMS ? How is security provided in RDBMS system ?
8. Write short notes on *any two* of the following : (5+5)
 - (i) CORBA
 - (ii) IPC (Interprocess Communication)
 - (iii) Remote system administration .

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**B.Sc. (Part II) (Information Technology)
EXAMINATION, 2007**

**JAVA PROGRAMMING
(B.Sc. I.T.-23)
Time allowed : Three Hours**

Maximum Marks : 50

Attempt any Five question . All questions carry equal marks.

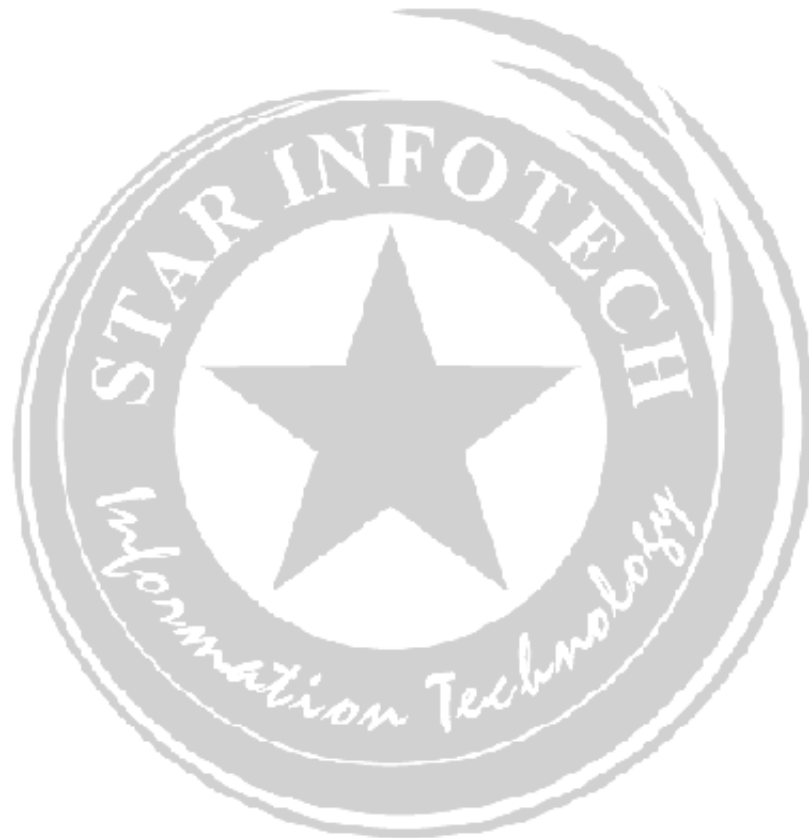
1. Write down and explain all the key features of an object-oriented programming language with suitable example . (10)
2. (a) Write down the difference between Java and C++. (5)
(b) Write down the difference between a variable and an object in Java ? Explain with suitable example . (5)
3. (a) What are constructors ? How are they created in Java ? (5)
(b) How are constructors useful in memory management ? Explain with suitable example . (5)
4. (a) How is multiple inheritance implemented in Java ? Explain with suitable example .
(b) What is the difference between overloading and overriding ? Explain (5)
5. Write a Java program to check whether the given string is palindrome or not ? Take input from user. (10)
6. (a) Write down the mechanism for exception handling . What is the difference between and exception an error ? (5)
(b) What is the use of packages ? How are they created in Java ? (5)
7. What is Java beans ? Write down and explain the beans architecture and its advantages. (10)
8. What is CORBA ? Write down and explain the CORBA architecture for distributed application (10)

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9. (a) What do you understand by Threads ? Explain the different types of threads implemented in Java. (5)
- (b) Write a program in Java to establish a Database connectivity and read a record from database with suitable example. (5)





**B.Sc. (Part II) (Information Technology)
EXAMINATION, 2007**

**COMPUTER GRAPHICS
(B.Sc. I.T.-25)
Time allowed : Three Hours**

Maximum Marks : 50

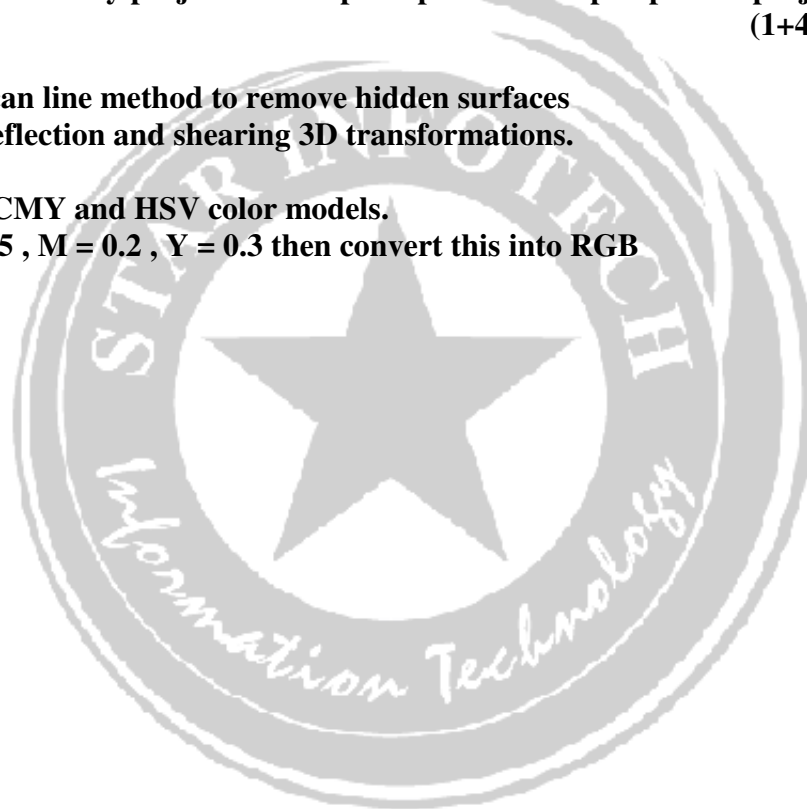
Attempt any Five question . All questions carry equal marks.

1. (a) Explain L.C.D. display technology.
(b) Consider two raster system with resolution 640×480 and 1280×1024 . What size frame buffer (in Bytes) is needed for each of these systems to store 12 to store 12 bits per pixel. (6+4)
2. (a) What are the two basic techniques to produce color display in color CRT monitor ? Explain them . (6+4)
(b) Define the following terms :
 - (i) Refresh Buffer
 - (ii) Persistence
 - (iii) Resolution
 - (iv) Aspect Ratio
3. (a) Give mid=point circle algorithm .
(b) Explain eight-way symmetry in circle.
(c) Find the pixels of a circle using mid-line circle algorithm where the radius of circle is 10 and origin of circle is at (0,0) starting from 0^0 to 45^0 . (4+2+4)
4. (a) Explain the following 2D transformations :
 - (i) Rotation
 - (ii) Reflection
 (b) Prove that two successive 2D rotations are additive :

$$R(\Theta_1) . R(\Theta_2) = R(\Theta_1 + \Theta_2)$$
 (6+4)
5. (a) Give the Cohen –Sutherland Line clipping algorithm (5+5)
(b) Explain depth sorting method.



6. (a) Give Sutherland –Hodge polygon clipping algorithm
(b) If there is a system with 8 inch by 10 inch video monitor that can display 100 pixel per inch . If memory is organized in one byte word , the starting frame buffer address is zero and each pixel is assigned one byte of storage Then find the address of pixel (x,y).
7. (a) Explain any *two* surface rendering methods
(b) How much time is spent scanning across each row of pixels during screen refresh on a raster system with a resolution of 1280 by 1024 and a refresh rate of 60 frames per second ?
8. What do you mean by projection ? Explain parallel and perspective projections (1+4.5+4.5)
9. (a) Explain scan line method to remove hidden surfaces
(b) Explain reflection and shearing 3D transformations.
10. (a) Explain CMY and HSV color models.
(b) If $C = 0.5$, $M = 0.2$, $Y = 0.3$ then convert this into RGB





**B.Sc. (Part II) (Information Technology)
EXAMINATION, 2007**

**OBJECT ORIENTED TECHNOLOGY AND
C++ PROGRAMMING
(B.Sc. I.T.-26)**

Time allowed : Three Hours

Maximum Marks : 50

Attempt any Five question . All questions carry equal marks.

1. (a) Write down the main features of object oriented programming . (6)
(b) What is class ? How does it accomplish data hiding ? Explain with example (4)
2. Describe the following :
(a) Scope resolution operator
(b) Reference variable
(c) Inline function ;
(d) User defined data types. (2.5 ×4)
3. Distinguish between the following :
(a) Structure and class
(b) Data encapsulation and data abstraction
(c) Inheritance and polymorphism
(d) Object and class
4. (a) What is function overloading ? Explain through an example . (5)
(b) Explain with example various types of constructors available in C++. (5)
5. (a) What do you understand by data hiding ? What are the various methods for protecting data from the external user of a class act ? (5)
(b) Write a C++ template to search a data from the sorted list (5)
6. (a) What is parameter passing ? Explain parameter passing schemes with example supported by C++. (5)
(b) What is operator overloading ? Why is it necessary to overload an operator ? List the operator that can not be overloaded. (5)

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- 7.(a) Write a program to add two complex numbers using operator overloading (5)
- (b) What is run time dispatching ? Explain how C++ handles run time dispatching (5)
8. (a) Explain the following :
- (i) Multiple inheritance
 - (ii) Hierarchical inheritance
 - (iii) Hybrid inheritance (6)
- (b) What is virtual base class ? When do we make a class virtual ? (4)
9. Write short note on any two of the following :
- (a) Stream state member function
 - (b) Opening and closing of files
 - (c) Comparison between functional programming and OOP approach (2×5)





**B.Sc. (Part II) (Information Technology)
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**COMPUTER ORIENTED STATISTICAL METHODS
(B.Sc. I.T.-21)**

Time allowed : Three Hours

Maximum Marks : 50

Attempt any Five question . All questions carry equal marks.

1. Define statistics . Discuss its scope and limitations . (10)

2. Distinguish between : (2.5×4=10)

- (i) Continuous and Discrete series :
- (ii) Exclusive and Inclusive series ;
- (iii) More than and Less than frequencies tables
- (iv) Ordinary and Cumulative frequencies

3. Calculate the median and mode from the following data : (10)

| Wages in Rs. | No. of Workers |
|--------------|----------------|
| Under 10 | 5 |
| Under 20 | 13 |
| 10-30 | 25 |
| 30 and above | 30 |
| 40-50 | 6 |
| 50 and above | 14 |
| 60 and above | 4 |

4. Calculate the standard deviation and coefficient of variation from the (10)

Following data :

| Profit(in Rs. '000) | No.of Firms |
|----------------------|-------------|
| -40 to -30 | 12 |
| -30 to -20 | 26 |
| -20 to -10 | 30 |
| -10 to 0 | 40 |
| 0 to 10 | 82 |
| 10 to 20 | 50 |
| 20 to 30 | 40 |
| 30 to 40 | 12 |
| 40 to 50 | 8 |

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5. Calculate Bowley's measure of skewness from the following data (10)

| Commission Payments | No. of Salesman |
|---------------------|-----------------|
| 110-115 | 4 |
| 115-120 | 10 |
| 120-125 | 26 |
| 125-130 | 49 |
| 130-135 | 72 |
| 135-140 | 90 |
| 140-145 | 52 |
| 145-150 | 33 |
| 150-155 | 17 |
| 155-160 | 7 |

6. What do you understand by Kurtosis? What purpose does kurtosis serve and also explain method of calculating kurtosis? (10)

7. Eight competitors in music contest are ranked by three judges in the following orders. By using rank correlation coefficient, discuss which of judges has nearest approach to common tastes. (10)

| First Judge | Second Judge | Third Judge |
|-------------|--------------|-------------|
| 1 | 2 | 4 |
| 8 | 5 | 6 |
| 3 | 4 | 2 |
| 6 | 6 | 5 |
| 2 | 1 | 1 |
| 5 | 7 | 8 |
| 4 | 3 | 3 |
| 7 | 8 | 7 |

8. Explain the meaning of term correlation. Does it always signify cause and effect relationship? What precautions should be taken in its interpretation? (10)

9. Define regression. Why are there two regression lines? Under what conditions can there be any one regression line? (10)

10. Two random variables have least square regression lines with regression equations:

$$2x + 3y - 26 = 0$$

$$x + 6y - 31 = 0$$

$$6x^2 = 9$$



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