



- KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE
- DON'T WRITE ANYTHING ON THE QUESTION PAPER

Answer ALL Questions

(10 X 10 = 100 Marks)

1. A financial organization has asked you to create an application that will store bank customer information in a file system. The details of customers include customer id, name, account type and balance. The application shall enable the presentation of information about the number of customers who fail to maintain the minimum balance with their complete details. Describe the strategy with relevant code blocks to implement the aforementioned requirement.
2. Briefly explain with appropriate code blocks the significance of communication between the threads in accessing the shared data.
3. Explicate with an example, PreparedStatement interface of java.sql library. State how do you claim PreparedStatement improves the performance of an application in comparison to using Statements.
4. Illustrate using Servlet implementation, how the web application that does not require persistent server session remembers various field values between the requests.
5. Elaborate with a neat diagram the working model of struts applications.
6. Write a Java application to maintain the collection of various products available in a departmental store. Implement searching of a product based on quantity and list out the complete details of the products matching with the search criteria. Justify the collection of your choice.
7. Develop the RMI application to perform the concatenation of two strings. The client should pass the necessary string parameters to the remote server methods to process and return the appropriate result.
8. Implement a Hibernate driven Web application to capture the 'student id' as input from the end user and display the details of the given student in HTML table format.

- 9.a) A student has the hobby of collecting stamps and the following 2-D array gives the month number and count of the number of stamps he has collected in each month (up to 8 months). Write a program to find the total count of the stamps collected at the end of each month. Say., At the end of month1 ->10, end of month 2->14, end of month 3->21 and so on. Display the month numbers, month-wise stamp count and the total count. Apply appropriate exception handling.

Month No,	1	2	3	4	5	6	7	8
No. of stamps	10	4	7	8	2	5	0	12
cumulative count at the end of each month								

OR

- 9.b) Write a program that demonstrates the constructor passing information about its failure to an exception handler. Define class Triangle, which throws an exception in its constructor if sum of the 2 sides (say a, b) is not greater than third side (say c). Your program should create an array of Triangle objects and compute area for each of them and catch the exception that is thrown from the constructor. While catching display the appropriate message. Calculate the area of the triangle using the formula:-

$$Area = \sqrt{s(s-a)(s-b)(s-c)}, \text{ where } s = (a+b+c)/2$$

- 10.a) Implement MVC based web application to facilitate searching of Books available in a Library. End user can be provided with an option to search either by book name or by author name. The application specification is as follows: Maintain the Book data in a table named 'Book' consisting of fields like Book Id, Book Name, Author Name, Publication Year, and Publisher. Display the result in formatted HTML view.

OR

- 10.b) Design an UDP application consisting of server that would encodes the message and returns the encoded message to the client. Encoding is done by replacing a character by the character next to it [i.e. a as b, b as c ...z as a]. Test the client and server program for the problem statement given above.

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