



BHARATIYA VIDYA BHAVAN'S

SARDAR PATEL INSTITUTE OF TECHNOLOGY

MUNSHI NAGAR, ANDHERI (WEST), MUMBAI - 400 058, India

(Autonomous College Affiliated to University of Mumbai)

End Semester Examination

Max. Marks: 100

Class: FY MCA

Course Code: MC506

Subject: JAVA Programming

Semester: II

Date: 03/07/2023

Time: 180 minutes

- Instructions: (1) All questions are compulsory.
(2) Assume any necessary data but justify the same.
(3) Preferably, write the answers in sequential order.

Q. No.	Questions	Max Marks	CO	BL
Q. 1 A.	<p>Note: Write the output with Justification</p> <p>a. What is the output of this program?</p> <pre>class multidimension_array { public static void main(String args[]) { int arr[][] = new int[3][]; arr[0] = new int[1]; arr[1] = new int[2]; arr[2] = new int[3]; int sum = 0; for (int i = 0; i < 3; ++i) for (int j = 0; j < i + 1; ++j) arr[i][j] = j + 1; for (int i = 0; i < 3; ++i) for (int j = 0; j < i + 1; ++j) sum += arr[i][j]; System.out.print(sum); } }</pre> <p>b. What is the output of this program?</p> <pre>class evaluate { public static void main(String args[]) { int arr[] = new int[] {0, 1, 2, 3, 4, 5, 6, 7, 8, 9}; int n = 6; n = arr[arr[n] / 2]; System.out.println(arr[n] / 2); } }</pre> <p>c. What is the output of this program?</p>	10	MC50 6.1	L3



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```
class array_output {
public static void main(String args[])
{
int array_variable[][] = {{ 1, 2, 3}, { 4, 5, 6}, { 7, 8, 9}};
int sum = 0;
for (int i = 0; i < 3; ++i)
    for (int j = 0; j < 3; ++j)
        sum = sum + array_variable[i][j];
System.out.print(sum / 5);
} }
```

d. What is the output of this program?

```
class selection_statements {
public static void main(String args[])
{
int var1 = 5;
int var2 = 6;
if ((var2 = 1) == var1)
    System.out.print(var2);
else
    System.out.print(++var2);
}
}
```

e. What is the output of this program?

```
class Output {
public static void main(String args[])
{
int a = 5;
int b = 10;
first: {
    second: {
        third: {
            if (a == b >> 1)
                break second;
        }
        System.out.println(a);
    }
    System.out.println(b);
}
}
```



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	<p>4. Write a program to search a number in an array given by the user using a function defined in String class.</p> <p>5. Explain Components of JDBC</p> <p>6. What are the benefits of using packages? Write down the steps in creating a package and using it in a Java program with an example.</p> <p>7. List and Explain different types of Result set. If you do not specify any Result Set type, what will be default values of the same?</p>			
Q. 4 A.	Why Web.xml is important in servlet. Write the importance tags used in web.xml	05	MC50 6.3	L2
Q. 4 B.	List and Explain Requestdispatcher in servlet. Write methods of Requestdispatcher with syntax and examples	05	MC50 6.3	L2
Q. 4 C	Draw and Explain Life cycle of Servlet. Write the advantages of using servlet over CGI.	05	MC50 6.3	L2
Q. 4 D	List and explain in brief different methods for maintaining session between web client and server.	05	MC50 6.3	L2
Q. 5 A	<p>Define Spring framework with all its components. Draw framework diagram to justify the same</p> <p>OR</p> <p>List and Explain AOP Terminologies. Write methods used for Types of Advice</p>	10	MC50 6.4	L2
Q. 5 B	The GUI displays the account ID and the balance, and let the user deposit to or withdraws from the account. For each transaction, a message is displayed to indicate the status of the transaction: successful or failed. In case of failure, the failure reason is reported. The possible failures are negative-amount-exception (in both deposit and withdrawal transaction) and insufficient-amount-exception (in withdrawal transaction). Min Balance=1000. AccountGUI.java, Account.java, NegativeAmountException.java and InsufficientAmountException.java handle account transaction	10	MC50 6.4	L4



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Q. 1 B.	Write the working description of following methods used in JAVA a. run() b. sleep() c. isAlive() d. destroy() e. checkAccess()	05	MC50 6.1	L2
Q. 1 C.	Explain the following terms with respect to exception handling. i) try ii) catch iii) throw iv) finally v) throws	05	MC50 6.1	L2
Q. 2 A.	What is a stream and what are the types of Streams and classes of the Streams?	06	MC50 6.2	L2
Q. 2 B	What is the use of User-Defined Exceptions? Should we make our exceptions checked or unchecked? Compare between Checked vs Unchecked Exceptions	06	MC50 6.2	L2
Q. 2 C	Write any two JAVA Program 1. Define a class animal. Define two classes from these classes as pet animals and wild animals. Under pet animals define class for dog and cat. Assume proper data 2. Write a program on constructor overloading. Create a class student, with two constructor, one is parameterized and another is non-parameterized, initialize with following data member, roll-no, name, percentage 3. Write a Java program to create an abstract base class ACCOUNT which has the data member balance, and two methods Deposit () and Withdraw (). Create two more classes SAVING and CURRENT which is inherited from base class ACCOUNT. Write the appropriate overriding method of it. 4. Write a Java program to copy the contents of one file to another file (Note: Take the name of source file and destination file from the user).	08	MC50 6.1 MC50 6.2	L4
Q. 3.	Write any Five 1. State four similarities between Interfaces and Classes. 2. Describe the uses of final and super keywords with respect to inheritance. 3. Difference between Scanner and Buffered Reader ? Which one is faster and why?	20	MC50 6.1 MC50 6.2 MC50 6.3	L2