

Unique Paper Code : 42347903
Name of the Paper : Internet Technologies
Name of the Course : B.Sc. (Programme): DSE 1B
Semester : VI
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Duration : 3 Hours
Maximum Marks : 75

Instructions for candidates: Attempt any FOUR questions out of six questions. All questions carry equal marks.

- Q1. Create an HTML document having five frames as per the structure given below. frame_2 has two links. On clicking Link_1, fileForLink1.html should be displayed in frame_4. On clicking Link_2, fileForLink2.html should be displayed in a new window. Also write the HTML file corresponding to frame_2. The file names in <...> represent the files having the default contents of the corresponding frame.

frame_1 <logo.jpg>	frame_3 <CompanyName.html>
frame_2 <showLinks.html> Link_1 Link_2	frame_4 < display.html>
	frame_5 <contactDetails.html>

Consider the following HTML code:

```
<html>
<head>
  <title>CSS</title>
</head>
<body>
  <h2> H2 heading.</h2>
  <p> This paragraph is normal.</p>
  <p class = "greenColor">Green paragraph</p>
  <h2 id = "italics">Italics H2 heading.</h2>
  <h2 class = "greenColor">Green H2 heading</h2>
</body>
</html>
```

Rewrite the code with CSS statements added in it, for the following:

- Background color of the webpage is yellow (an inline CSS statement)
- All the elements that belong to the `greenColor` class should be displayed in green color (an internal CSS statement)
- The element with `italics` id should be shown in italics (an internal CSS statement)
- Font size of all the paragraphs should be 10pt. (an internal CSS statement)

Q2. Create a webpage containing a textbox to read a number and a button 'Find square root'. When a user clicks on the button, a JavaScript function should do the following:

Condition to be checked	Display in an alert dialog box if condition is true
Input field is empty	"Enter some data"
Any non-numeric character in the data	"Only numeric data allowed"
Data is numeric but is negative	"Positive numbers only"

If the number is a positive integer, compute and display the square root of the number in an alert box.

Write the output of the following JavaScript code segment. Justify your answer.

```
var x = "5";
var y = 5;
var z = 2;
document.write((x == y) + "<br />");
document.write((x === y) + "<br />");
document.write((x + y + z) + "<br />");
document.write((z + y + x) + "<br />");
```

Given that there is a webpage containing three elements: (i) a label displaying a question: "What is the capital of India?" (ii) a text box to enter the answer of this question and (iii) a button named "Check". When a user enters the answer of the question in the text box and clicks on the button, a JavaScript function `checkAnswer` should display "Correct Answer" if the answer is correct else it should display "Incorrect Answer". The comparison should not be case sensitive. Write the code for this `checkAnswer` function.

Q3. Find the error(s) in the given Java code, correct the code and give the output of the corrected code.

```
class Main {
    public static void main(String args[]){
        rectangle r = new rectangle();
        r.area(3, 7);
    }
}
class shape {
    abstract void area(int d1, int d2);
}
class rectangle extends shape {
    void area()
    { System.out.println("Area = " + length * breadth); }
}
```

Given a scrollable ResultSet object rs, write JDBC statements to move its virtual cursor to:

- row number 25
- the first row
- two rows after the current row
- five rows previous to the the current row

Consider a table Student(RollNo, Name, Course).

- Write the statement to register the JDBC driver for the database College having this Student table, with the username "root" and password "sql@123".
- Consider a stored procedure named NoOfRows that returns the number of students who are pursuing 'Mathematics'. The first parameter is the IN parameter and the second is the OUT parameter. Complete the following JDBC code snippet so that this stored procedure can be used:

```
statement = connect.createStatement();
_____ cstmt = connect.prepareCall("{call _____(?, ?)}");
cstmt.setString(1, _____);
cstmt.registerOutParameter(2, Types.INTEGER);
cstmt.execute();
System.out.println("No. of rows: " + cstmt._____(_____));
```

- Q4. Create a class `ThreeDimension` which contains private members as `x`, `y` and `z` coordinates of a 3D point. In addition define the following methods in the class:
- a parameterized constructor which initializes all the three variables by passing parameters
 - a method that returns the Euclidean distance between the invoking object and another `ThreeDimension` object that is passed to it as an argument
 - override `toString()` method to display the co-ordinates as a 3D point

Write the output of the following Java code. Justify your answer.

```
class A {
    private String a;
    A(String ad){
        a = ad;
    }
    void display(){
        System.out.print("\na: " + a);
    }
}

class B extends A {
    private int b;
    B(String a, int bd ){
        super(a);
        b = bd;
    }
    B(String a){
        super(a);
    }
    void displayOne(){
        System.out.print("\nb: " + b);
    }
    void displayTwo(){
        super.display();
        System.out.print("\nb: " + b);
    }
}

class Main {
    public static void main(String args[]){
        B s1 = new B("Hello");
        B s2 = new B("There", 98);
        s1.displayOne();
        s2.displayTwo();
    }
}
```

Q5. Write a JSP program using JSTL to display the following pattern for the number of rows entered by the user in a textbox (e.g. - number of rows in the example below is 3):

```
1
22
333
```

Complete the following JSP code snippets, such that on clicking the hyperlink `HERE`, `Second.jsp` is opened and displays the message `Hello World!!`

`First.jsp`

```
<%@ _____ prefix="c"
    uri = "http://java.sun.com/jsp/jstl/core" %>
<html>
<body>
<_____ var = "setVariable" value = "Hello World!!"
scope = "_____" />
Click <a href = "_____"><b>HERE</b></a> to view
Second.jsp file.
</body>
</html>
```

`Second.jsp`

```
<%@ taglib _____ %>
<html>
<body>
<c:out value="${sessionScope._____" }" />
</body>
</html>
```

Consider a relational schema with table `Employee (empNo, Name, Department, Salary)`. Assume data source object is set using the following statement:

```
<sql:setDataSource var="EmployeeData"
    driver="com.mysql.jdbc.Driver" url=
    "jdbc:mysql://localhost:3306/du" user="su"
    password="pwd" />
```

Write JSTL action statements for the following queries:

- Give an increment of Rs.2000/- to all the employees of the 'Sales' department.
- Retrieve the details of all the employees of 'HR' department.

Q6. Write an HTML code to create a form with the following elements:

Label	Name	Type
String	txt1	Textbox
Start	txt2	Number
End	txt3	Number
Find Substring	submit	Submit Button
Reset	btnClear	Reset Button

Write a JavaScript code that checks if entries are made in String, Start and End. The code should also check that Start should be less than End.

Write a JSP code that generates the substring corresponding to the data entered in the above form.