Unique Paper Code: 32341501

Name of the Course: B.Sc. (H) Computer Science

Name of the Paper: Internet Technologies

Semester: V

Duration: 3 Hours

Maximum Marks: 75

Students admitted in the year: 2018

Instructions for Candidates:

Attempt any Four out of Six questions.

All questions carry equal marks.

Q1. A company has to connect a Java application to a database. What is the first step to establish the connectivity between the application and the database and what are the different options available for this? What are the other essential parameters required to successfully establish this connectivity?
Write a program to establish connectivity between a Java application and a database on MS SQL which should display the details of employees (i.e., *emp_id, emp_name, department, emp_sal*) whose department is "Computer Science". Further, update salary details of all these selected employees by increasing their salary by 10% of their current salary.

Q2. What is the importance of using a Java based reusable component in server-side scripting and what are the ways in which it can be used in JSP code?
Write a bean class named *Temperature* to manipulate the following properties: *currentTemperature, NumOfLocations* (It is a read-only property that records the number of locations sensing the temperature). Display these properties using standard JSTL action elements.

Q3. What are the different types of validations using JavaScript that can be performed when sending data accepted from the user through a form on the Internet?

Design a form to enroll students with the following validations:

- Student Roll number (should be numeric and its length should be 4)*
- Name (Only alphabets) *
- Valid email id*
- Country (Drop down list; values should only be India, Australia and Canada)
- Password (length between 8 to 12)*

The form should have a **SUBMIT** button that on clicking displays the data entered by the user and a **RESET** button to clear the data. The star-marked fields are necessary fields. Design this form using JavaScript and HTML.

Q4. As the JSP specification is based on the Java servlet specification, enumerate reasons (for and against) favoring JSP over Servlet.

Given the following request:

GET /EXAM.htm HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: www.itexam.com
Accept-Language: en-us
Accept-Encoding: gzip, deflate
Connection: Keep-Alive

Explain the above request and all the headers used.

Further, also consider the following request:

POST /cgi-bin/process.cgi HTTP/1.1
User-Agent: Mozilla/4.0 (compatible; MSIE5.01; Windows NT)
Host: www.itexam.com
Content-Type: text/xml; charset=utf-8
Content-Length: 88
Accept-Language: en-us
Accept-Encoding: gzip, deflate
Connection: Keep-Alive
course=Computer+Science&subject=CN

Explain the above request and all the headers used.

Q5. Write JSP code to insert the contents to a table *Employee* with schema given as (*username, firstname, lastname*) of *mysql* database.
Implement a static login page with username "*user*" and password "*root*" using JSTL. Also, perform the necessary validations of the above fields (username and password), such that the fields should not be left blank and respective messages be shown when correct values are entered and also when incorrect values are entered by the user.

Q6. Give the output of the following JavaScript code explaining the reason of the output, wherever the output is produced.

```
<!DOCTYPE html>
<html>
<body>
<p id="demo"></p>
<script>
  var x = 10;
  document.getElementById("demo").innerHTML = (x = = = "10");
var a = 10;
var b = 0;
document.write(a/b);
var a = 'internet';
var b = 'technology';
var c = a/b;
document.write(c);
var grand_total = eval ("10*10+5");
document.write(grand_total);
var firstNames = ["c", "c++", "java", "python", "perl"];
for (var i = 0; i < firstNames.length; i++) {
if(i%2===0)
continue;
document.write(i);
}
var arr = [1, 2, 3, 4, 5, 6];
document.write(arr);
print(arr.join('/'));
document.write(arr);
var new_arr = arr.reverse();
document.write("<br>");
document.write(new_arr);
</script>
</body>
</html>
```