Past Paper 2020.

Short Q-Ans.

(1) Why do we use Form tag in HTML?

The HTML <form> tag is used for creating a form for user input. A form can contain textfields, checkbones, radio-buttons and more. Forms are used to pass user-data to a specified URL.

```
<form action = "hello.php" method = "get" >
    <input type = "text" />
</form>.
```

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(2) Write down life cycle of JSP page?

Already done in previous paper.

(3) Diff b/w client-side and server-side scripting languages?

Already done in previous papers.

(4) Why do we use MVC architecture?

We use MVC architecture because MVC supports rapid and parallel development. If an MVC model is used to develop any particular web application then it is possible that one programmer can work on the view while other can work on the controller to create the business logic of the web application.

(5) What is the purpose of session page directive in JSP?

Session attribute of JSP page directive checks whether JSP page is in a particular HTTP session or not. It can have true or false value. Default value is true.

→ Syntax:

<%@ page session = "value" %>.

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(5) What is the purpose of using AJAX in web programming?

Already done in previous paper.

(6) What are the components of JavaBeans?

→ JavaBean consists of :

- events
- methods
- persistence
- properties.

→ Non-GUI based and GUI based components are the two types of components.

(7) How can you achieve client-side validation?

The user input validation that takes place on the client side is called client-side validation. Scripting languages such as JavaScript and VBScript are used for client-side validation. In this kind of validation, all the user input validation is done in user's browser only. It is not so secure.

(8) What are the components of an HTTP Request?

Already done in previous paper.

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(10) Do you see any header status code?

NO.

Long Q-Ans.

(1) Why do we implement state management in web programming. Briefly explain its all techniques.

State management means to preserve state of a control, webpage, object/data, and user in the application explicitly because all ASP.NET web applications are stateless, i.e., by default, for each page posted to the server, the state of controls is lost. Nowadays, all the web apps demand a high level of state management from control to application level.

.Types of State Management:-

→ There are two types of state management techniques:

(i) Client-side.

(ii) Server-side.

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Client - side	Sever side.
(1) Hidden Field.	
(2) View State.	(1) Session.
(3) Cookies.	(2) Application.
(4) Control state.	
(5) Query String.	

Client - side.

• Hidden Field :-

Hidden Field is a control provided by ASP.NET which is used to store small amounts of data on the client.

<asp : HiddenField ID = "HiddenField1" runat = "Sever" />

• View State :-

View State is used to store user's data, i.e., sometimes the user needs to preserve data temporarily after a post back, then view state is prefered way for doing it.

• Cookies :-

Cookie is a small text file which is created by the client's browser and also stored on the client hard disk by the browser. It does not use sever memory. Generally, a cookie is used to identify users.

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• Control State :-

Whenever we develop a custom control and want to preserve some information, we can use view state but supposed view state is disabled explicitly by the user, the control will not work as expected. For expected results for the control we have to use control state property.

• Query string :-

A Query String is a collection of characters input to a computer or web browser. A Query string is helpful when we want to transfer a value from one page to another.

Request.QueryString(variable)[(Index).count].

Server-side.

• Session :-

Session management is a very strong technique to maintain state. Generally, session is used to store user's information and/or uniquely identify a user.

• Application :-

The data stored in application state is common for all users of that particular ASP.NET application and can be accessed anywhere in the application. It is also called application level state management.

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(2) Write a servlet class that'll dynamically create a table of all the information stored in the database regarding CORONA patients.

Table contains three columns (patient_name, patient_cnic, patient_location).

DB Name : Database.

Table Name : CORONA (patient_name (varchar(50)), patient_cnic (varchar(50)), patient_location (varchar(50))).

```
import java.io.*;
import javax.servlet.*;
import javax.servlet.http.*;
import java.sql.*;
WebServlet ("/CORONAservlet")
public class CORONAservlet extends HttpServlet {
    public void doGet (HttpServletRequest request,
        HttpServletResponse response) throws
        ServletException, IOException {
        printWriter out = response.getWriter();
        response.setContentType ("text/html");
        out.println ("<html><body>");
    try {
        Class.forName("sun.jdbc.odbc.JdbcOdbcDriver");
        Connection con= DriverManager.getConnection
```

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```
("jdbc:odbc:mydsn", "root", "");
    Statement stmt = con.createStatement();
    ResultSet res = stmt.executeQuery("select *
                    from CORONA");
    out.println("<table border=1 width=50%
                height=50%>");
    out.println("<tr><th>patients_name</th>
    <th>patient_cnic</th><th>patients_location
    </th></tr>");
    while(rs.next()){
    String n=rs.getString("patients_name");
    String m=rs.getString("patients_cnic");
    String s=rs.getString("patients_location");
    out.println("<tr><td>"+n+"</td><td>"
    +m+"</td><td>"+s+"</td></tr>");
    }
    out.println("</table");
    out.println("</html></body>");
    con.close();
} catch(Exception e){
    out.print("error");
    }
}
}
```

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(3) Write a JSP page which will dynamically create an unordered list of corona hospitals that are stored in the database.

Table contains three columns (Hospital Name, Hospital location, CORONA ward Incharge).

DB Name : Database.

Table name : CORONA (hospital_name (varchar (50)), hospital_location (varchar (50)), ward_Incharge (varchar (50)).

```
<%@ page import = "java.sql.DriverManager" %>
<%@ page import = "java.sql.ResultSet" %>
<%@ page import = "java.sql.Statement" %>
<%@ page import = "java.sql.Connection" %>
<%
  String driver = "com.mysql.jdbc.Driver";
  String connectionUrl = "jdbc:mysql://localhost:3306/";
  String database = "Database";
  String userid = "root";
  String password = "";
  try {
      Class.forName(driver);
  } catch (ClassNotFoundException e) {
      e.printStackTrace();
  }
```

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```
Connection connection = null;
Statement statement = null;
ResultSet resultSet = null;
%>
<html>
<body>
<ul>
<%
try {
connection=DriverManager.getConnection(connectionUrl
+Database, userid, password);
statement = connection.createStatement();
String sql = "select hospital_name, hospital_location,
ward_incharge from CORONA";
resultSet = statement.executeQuery(sql);
while resultSet.next()) {
%>
<li><%= resultSet.getString("hospital_name")%></li>
<li><%= resultSet.getString("hospital_location")%></li>
<li><%= resultSet.getString("ward_incharge")%></li>
<%
}
connection.close();
}
```

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```
catch (Exception e) {
    e.printStackTrace();
}
%>
</ul>
<body>
</html>
```