***Subject:*** - Web Technologies and Application (*Elective I*) (*CT72505*)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **_All_** questions.
✓ The figures in the margin indicate **_Full Marks_**.
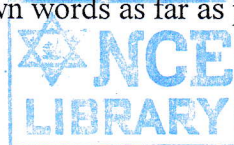✓ Assume suitable data if necessary.

1. What is Internet and Web? Explain the importance of Web Technology. [4+4]

2. Write an HTML code snippet to create a simple form that collects student information, including their name [text field], age[number field], email[email field], and course of study[select field with options: science, math and english]. The form should have proper labels and a submit button. Explain external CSS with example [5+3]

3. A table named 'employee' is already created in database "Office' with columns emp_Id, name, address, designation, and contact. Write server side scripting to insert the data in database. [8]

4. Explain the concept of multi-tier architecture in web development. Illustrate with a diagram a three-tier architecture consisting of a presentation layer, business logic layer, and data layer. [8]

5. What is Document Object Model (DOM)? Explain document object methods to access and change the contents of HTML document. Differentiate between session and cookies. [2+3+3]

6. How does Web application framework differ from library? Explain CMS along with its pros and cons. [4+4]

7. Explain the concept of collective intelligence. Also discuss the application of collective intelligence in web applications. [4+4]

8. What is Service Oriented Architecture (SOA)? Compare SOAP and REST. [4+4]

9. Explain the significance of RSS (Rich Site Summary or Really Simple Syndication) in web content distribution? What is linked Open Data? [4+4]

10. Write short notes on: (Any Two) [2×4]

    a) DTD (Document type Declaration)
    b) AJAX (Asynchronous JavaScript and XML)
    c) SOAP (Simple Object Access Protocol)
    d) Crawling

\*\*\*

**Subject:** - Web Technologies and Applications (CT72505) (Elective I)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. Describe the concept of the client/server computing paradigm and its role in modern computing. Illustrate with real-world examples of applications that utilize this architecture. [5+3]

2. Write HTML code to generate a form with following fields:

   First name [text field]
   Last name [text field]
   Country [select field] with options: Nepal, China, India
   with its appropriate attributes like: method, action, placeholder etc. [8]

3. Explain the concept of multi-tier architecture with proper diagrams. Explain the advantages of multi-tier architecture in modern computing. [5+3]

4. Write html code to generate the form with following fields:

   Name [text field]
   Email [text field]
   Gender [radio]

   And also write PHP code for the above form validation and display the collected form values. [8]

5. Discuss some features of javascript. Explain the concept and significance of javascript DOM. [3+5]

6. Explain the concept of content management system, with appropriate examples. [8]

7. Explain how AJAX can be used for html form processing. [8]

8. Explain the concept of service oriented architecture with a real world example. [5+3]

9. Explain significance of XSLT with example code. [8]

10. Write short note on: (Any Two) [2×4]

    a) Semantic web
    b) REST
    c) Application and Web 3.0

***

---

***Subject:*** - Web Technologies and Applications (*CT72505*) (*Elective I*)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. Explain with diagram of client-server architecture. [8]

2. Describe the structure of HTML documents and also explain different types of CSS. [4+4]

3. Create a simple registration form that collects a user's name, email and password. The form should validate that all fields are filled out and that the email is in the correct format. Once the form is submitted, save the user's information to a MySQL database. To accomplish this, you will need to: [12]

   i) Create an HTML form that collects the user's information and sends it to a PHP script when submitted.

   ii) Use PHP to validate the form data and ensure that all fields are filled out and email is in the correct format.

   iii) Connect to a MySQL database using PHP and create a table to store the user's information.

   iv) Use PHP to insert the user's information into the database when the form is submitted. [12]

4. Differentiate between web frameworks with normal programming language. [6]

5. What are the major differences between session and cookies? Explain the term regular expression with practical example. [2+6]

6. Create a web page with a button that, when clicked, displays an alert box with a random number between 1 and 10. To accomplish this, you will need to: [8]

   i) Create an HTML button on a web page.
   ii) Use JavaScript to listen for clicks on the button.
   iii) Generate a random number between 1 and 10.
   iv) Display an alert box with the random number when the button is clicked.

7. Explain the concept of Web 2.0 with some key features. [8]

8. Explain the role of XML documents and DTDs in the creation of structured data on the web. [8]

9. Explain the semantic web with practical example. [6]

10. Write short notes on: (Any Two) [2×4]

    a) Service oriented architecture
    b) SOAP
    c) REST

***

**Subject:** - Web Technologies and Applications (*CT72505*) (*Elective I*)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
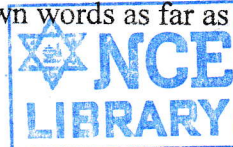✓ Assume suitable data if necessary.

1. What is internet? Explain the importance of web technology. [1+4]

2. Explain CSS (Cascading Style Sheet). How external style sheets can be inserted in a html document. Illustrate with example. [2+3]

3. What is Document Object Model (DOM)? Explain rowspan and colspan attributes in html tables with example. [2+3]

4. Explain how CGI server-side script execution works. [5]

5. What is the difference between: [5+5]

   a) MVC and 3-Tier Architecture
   b) Client-side scripting and Server-side scripting

6. What are cookies? Discuss the importance of cookies in Javascript using suitable example. [2+3]

7. What is content management system? Explain information system at different levels of management. [1+4]

8. What is Web2.0? Highlight the differences between Web1.0 and Web2.0? [2+3]

9. Define XML. Write internal and external DTD to describe "mail" as root element and "to" "from", "subject" and "message" as the child elements. [2+8]

10. What is service oriented architecture? Explain SOAP. [2+3]

11. What is REST? Mention the HTTP methods supported by REST. [2+3]

12. What is Semantic Web? Explain the importance of semantic web with suitable example. [2+3]

13. Write short notes on: (Any Two) [2×5]

    a) AJAX
    b) Resource Description Framework (RDF)
    c) CORBA
    d) JDBC

***

**Subject**: - Web Technologies and Applications (*Elective I*)(*CT72505*)

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. What is internet and web? Differentiate web1.0, web2.0 and web3.0. [3+5]

2. What is CSS? Explain its types with example. [2+6]

3. Design a webpage which contains a form where user can input name, gender, address, email and submit button to submit the form. Also validate the form using javascript. [8]

4. Write the program to connect database and insert a data using server-side scripting language [Assume database_name "employee", table_name "info" with columns id, firstname, lastname, address, post and contact]. [8]

5. Distinguish between Content Management System (CMS) and Web Application Framework. Describe the working of the MVC (Model View Controller) architecture. [3+5]

6. Explain the working principle of AJAX request and response. Explain the term wikis and blogs. [4+4]

7. Create a XML file to store information about a class on a module to record the student details where each student has roll_no, name, faculty. Display the XML Using XSLT. [4+4]

8. What is service oriented architecture? Compare SOAP and REST. [4+4]

9. What is semantice Web? Explain the semantic web component RDF and OWL. [2+6]

10. Write short notes on: (Any Two) [2×4]

    a) Crawling
    b) Tagging and folksonomies
    c) RSS feed
    d) Javascript DOM

***

TRIBHUVAN UNIVERSITY
INSTITUTE OF ENGINEERING
**Examination Control Division**
2078 Bhadra

| Exam. | | **Regular** | |
|-------|------|-------------|-----|
| Level | BE | Full Marks | 80 |
| Programme | BEX, BCT | Pass Marks | 32 |
| Year / Part | IV / I | Time | 3 hrs. |

**Subject:** - Web Technologies and Applications *(Elective I)(CT 72505)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. What is Internet and Web? Explain the importance of Web Technology. [4+4]

2. Design HTML User Registration form as below. Validate the registration form using JavaScript. [10]



3. What do you mean by Server side processing? Explain Multitier architecture? [4+4]

4. Explain Dialogue Boxes in JavaScript? [6]

5. What is Content Management system? Explain Web application framework. [3+5]

6. Differentiate Web 2.0 and Web 3.0? Why Tagging-folksonomies are important? [4+4]

7. Define XML and XSLT. Explain with appropriate example. [10]

8. Explain Service Oriented Architecture (SOA). Differentiate SOAP and REST? [6+4]

9. What is semantic web? Explain the purpose of semantic web with suitable example. [6]

10. Write short notes on: (Any Two) [2×3]

   a) Crawling
   b) AJAX
   c) DOM
   d) RDF

***

*Subject:* - Web Technologies and Applications *(Elective I) (CT 72505)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt **All** questions.
✓ The figures in the margin indicate **Full Marks**.
✓ Assume suitable data if necessary.

1. Explain how internet evolved. [4]

2. Define XML? What is DTD (Document Type Definition)? Design well-formed XML document for "Teacher". Teacher should have data such as Name, Address, Phone, Age and Email. Name should contain FirstName and LastName. [2+3+5]

3. Explain the CGI server side script execution mechanism. [6]

4. What is Document Object Model (DOM)? Explain DOM on the basis of HTML / Javascript. [6]

5. Explain the working of web crawlers. [8]

6. Write the HTML5 code to accept input from a user for registering in IOE examination form. The required inputs should be FirstName, LastName, Email, CollegeName, Gender, ExamType (ie. Regular or Back). [10]

7. What is the difference between [5+5]
   a. GET and POST request
   b. Client-side scripting and Server-side scripting

8. Explain CSS (Cascading Style Sheet). How is XHTML different from HTML. [3+3]

9. Explain Model View Controller (MVC) pattern. [5]

10. What is REST? Mention the HTTP methods supported by REST. [2+3]

11. What is Web2.0? What are the difference between Web1.0 and Web2.0? [2 + 3]

12. What is Semantic Web? Explain the purpose of semantic web with suitable example. [2+3]

***

| Exam. | | Regular | |
|---|---|---|---|
| Level | BE | Full Marks | 80 |
| Programme | BEX, BCT | Pass Marks | 32 |
| Year / Part | IV / I | Time | 3 hrs. |

*Subject*: - Web Technology and Applications *(Elective I) (CT72505)*

✓ Candidates are required to give their answers in their own words as far as practicable.
✓ Attempt __All__ questions.
✓ The figures in the margin indicate __Full Marks__.
✓ Assume suitable data if necessary.

1. Difference between internet and WWW. Explain Client Server computing paradigm and provide its importance. [2.5+2.5]

2. Given is the HTML code: [2+2+2]

```
<html>
<head>
</head>
<body>
  <div style="padding:10px;float:left;">
   <div id="leftbox" style="width:100px;height:100px;float:left;border: solid 1px;">
    ON LEFT
   </div>
   <div id="rightbox" style="width:100px;height:100px;float:left;border: solid 1px;">
    ON RIGHT
   </div>
  </div>
</body>
</html>
```

The output of the above code is:

| ON LEFT | ON RIGHT |
|---|---|
| | |

Use CSS Box model (margin/padding) to do the following:

  a. Separate left and right box by a total of 10 px
  b. Move text "ON LEFT" by 10 px towards right
  c. Move text "ON RIGHT" by 10 px towards right

3. Define web documents and web browser? Explain major steps of information retrieval. [2+2]

4. Explain JavaScript DOM model. Make use of JavaScript function to display the date and time in either HTML document or console. [2+3]

5. Explain any three server side scripting language used in web? Explain multi-tier architecture. [2+2+2+4]

6. What is the concept of web 2.0? Explain web 2.0 tools such as Blogs, Wiki and Social Networking. [8]

7. What do you mean by well formed XML document? Explain DTD with example. [6]

8. What is semantic web? Explain the use and purpose of semantic web. Why it is needed in present web? Give your own reason with example. [8]

9. Define web application framework. List some advantages using web application framework. Explain the concept of MVC (model-view-controller) [8]

10. Write short notes on: [2.5×4]
    a) Web crawling
    b) Ajax
    c) Server side programming
    d) Cascading style sheets

***

6. What do you mean by CMS (content management system)? Explain MVC architecture in web? [3+5]

7. Explain the web version in detail and differentiate between Web 2.0 and Web 3.0. [6+2]

8. Explain about XML document? Explain XSLT and WSDL. [3+4]

9. What is semantic web? Explain harnessing of collective intelligence in web 2.0? Write the brief notes on AJAX and REST. [2+5+8]

10. Write short notes on: ( any three) [12]

    i) SOA and SOAP
    ii) Tagging and Folksonomies
    iii) Difference between Client Side and Server Side scripting languages
    iv) Impact of social networking and blogs

***