25/11/19

Indian Institute of Engineering Science and Technology, Shibpur

B.Tech (CST) 5th Semester Final Examination, November 2019
Web Technology   CS521/3

FULL MARKS: 70

TIME: 3 Hrs.

Use separate answer script for each half.

1st Half

Answer question number 1 and **any two** *from the rest.*

1. Attempt **any five (5)** questions.

   (a) What are pseudo elements in CSS?

   (b) Explain some of the advantages and limitations of CSS.

   (c) What are logical tags and physical tags in CSS?

   (d) What is the purpose of the z-index and how is it used?

   (e) What are inline elements and block-level elements in HTML?

   (f) Can we modify the attributes value of the HTML tag dynamically?

   (g) Explain limitations of Ajax.

   $[3 \times 5]$

2. (a) What are the different ways to get an element from DOM?

   (b) How can one verify whether one element is a child of another in DOM?

   (c) What is the best way to create a DOM element, setInnerHTML or createElement?

   (d) How could you make sure to run some javaScript when DOM is ready like $(document).ready?

   $[2+2+3+3]$

3. (a) What is Ajax? How to send an Ajax request in JavaScript?

   (b) What are different readyState in Ajax?

   (c) How to cancel the current request in Ajax?

   $[4+3+3]$

4. (a) What are the benefits of JSON over XML?

   (b) What all different request methods are there in HTTP? Describe each of them.

   (c) Why JSON is chosen most of the time to represent data over XML?

   (d) Explain the contents of a HTTP response message.

   $[3+4+3]$

2nd Half

*Attempt **any two** questions. One mark is reserved for clarity of presentation.*

5. (a) Let a document comprise of one or more (that is, any number of) files and/or strings. For example, a biodata of a student (a document) may comprise of his/her name (a string), roll number (a string containing a number), photo (an image file), etc. You are required to design a web-based application for creation, modification and viewing such documents. The strings associated with a document has to be kept in an RDBMS and the files (corresponding to a document) are maintained as files (as maintained under an operating system). Only an authorised *user* may perform an operation (that is, create, modify, view) on a document. Modification of a document involves **only addition of a new string or a new file** to that document. It is desirable that the application be conceived as multiple services (say, database service for interaction with the RDBMS, file service to maintain files associated with the documents, etc.). Such services should be implemented using SOAP technology. Design such an application as stated below.

   (i) Different services to be implemented with a clear description for each, along with a suitable diagram showing the interaction among those services.

   (ii) Specify the interface (preferably SOAP) to be implemented by each of the services.   [7+10]

6. (a) What are the REST constraints (that is, the guiding principles of REST)?

   (b) With suitable example(s) explain the motivation behind each of the REST constraints along with how it can be implemented using some technology of your choice.   [5+12]

7. Write short notes on the following.

   (a) SOAP request and response and its implementation using PHP.

   (b) HTTP server implementing a RESTful API.   [8+9]