B.Tech. CE Semester-V

Subject: Advanced Technologies

Lab – 1

Instructions to students:

- Create and upload a document/pdf file with solutions of following questions in the google form provided by instructor.
- File name should be <AT_Lab_01>_<Roll number>

  e.g. AT_Lab_01_CE001.docx
- Each student has to upload/submit individually.
- Each assignment/task will be evaluated and graded.
- Assignment questionnaire are useful for subsequent theory/practical/viva-voce/quiz examinations and company interviews.
- Students have to put efforts on their own. If the content of a submitted document of a student matches of other student's document significantly, marks of both the students would be downgraded to zero.
- Document format: Page A4 size, Margins: 1 inch all side, Font type: Times New Roman, Font size: 11

Assignment Questions:

1) What is *plagiarism*? What kind of steps should be taken to avoid it?
2) What is Intellectual Property Right (IPR)? Why should we know it?
3) What is the difference between URI and URL?
4) What is the maximum length of URL string?
5) What are the different protocols understood by browsers?
6) Differentiate between HTTP and HTTPS protocols.
7) What is port number? What is the significance of it? What do you mean by reserved and unreserved port numbers? List some reserved port numbers of some popular applications.
8) What is DNS? Draw the architecture of DNS. List out types of DNS. Briefly explain the working of DNS.
9) What is URL encoding? What is the use of it?
10) What are MIME types? Give examples.
11) Differentiate between *block* elements and *inline* elements in HTML. Give examples of each.
12) List and explain *semantic tags* of HTML5.
13) What is web-form-url encoding? What is multi-part form data? In which situation we have to use it?

14) Compare and contrast HTML with XML.
15) Draw the structure of HTTP request and response message and also show the typical content of it.
16) List out the status code and its description of HTTP response message.
17) List out the HTTP request method/verbs and purpose of each one.
18) List and explain various HTTP request/response message header content.
19) Give the difference between http GET request and POST request.
20) What are 'push' and 'pull' protocols? Give examples applications which uses these protocols.
21) Download and install "wget" and "curl" utilities (On Linux it might be already available). Use them and write example commands and its output. (10 different commands for each one)
22) Download and install "Postman". Learn how to use it and write description, how you have used it. (You can include screenshots (crop it, if required) if you wish)
23) What is "search engine optimization"? How to design our website to take benefit of it?
24) What are assistive technologies? Give examples and explain any two.
25) What is responsive web site? How to make our website responsive?
26) What is web server? What is application server? Draw the architecture of both. Compare and contrast web server with application server. Give real world examples of each server.
27) What is Cross-Origin-Resource-Sharing (CORS) request? What is the significance of it?
28) What is polyfill (browser fallback)?
29) What is web accessibility?
30) How to validate your web page? Can we validate third-party web page?
31) What is UX and UI design? Differentiate between UX and UI.
32) What is the difference between scalability and elasticity?