1. [10 marks]

(i) State whether each of the following statements is true or false. If the statement is false, explain why. [2 marks]

a) Cascading Style Sheets 3 (CSS3) is used to specify the presentation, or styling, of elements on a web page (e.g., fonts, spacing, sizes, colors, positioning). True

b) Ensuring a consistent look and feel on client-side browsers is one of the great challenges of developing web-based applications. True

c) An HTTP request typically posts (or sends) data to a server for updating stored data on the server. True

d) Client-side scripts often can access the server’s file-directory structure. True

(ii) Fill in the blanks in each of the following statements: [3 marks]

1. IPv6 is the next-generation Internet Protocol that features built-in security and a new addressing scheme, significantly expanding the number of addresses available.

1. HTML documents normally contain hyperlinks, which, when clicked, load a specified web document.
2. A URL contains information that directs a browser to the resource that the user wishes to access; web Servers make such resources available to web clients.
3. The two most common HTTP request types are get and post.
4. Web-based applications are multitier applications. The bottom tier (also called the data tier or the information tier) maintains the application’s data and typically stores data in a relational database management system. The middle tier implements business logic, controller logic and presentation logic to control interactions between the application’s clients and its data. The top tier, or client tier, is the application’s user interface, which gathers input and displays output.

f) Android, the fastest growing mobile and smartphone operating system, is based on the Linux kernel and Java.

(iii) Describe the difference between client-side programming and server-side programming. [5 marks]

Client-sided programming operates on the client/user’s web browser. It can be used to validate the user’s input, interact directly with the web browser, enhance the webpages which the user visits, and add client-server communication functionality. However, it is also limited to the user’s browser. Additionally, it must also support scripting language capabilities. Finally, it can also be seen by the user, which results in it being less secure for information.

Server sided programing has less restrictions and is more flexible as the required software can just be stored and run on the web server and not on the client’s computer browser. This allows many different languages and functionalities providing a wide array of capabilities to the developer. It is also more secure as the client cannot see all of the application’s code or stored information.