1. C
2. B
3. C
4. B
5. B
6. B
7. C (should be getElementsById – case sensitive)
8. A
9. B
10. D
11. B
12. A
13. A
14. D
15. C
16. D
17. A
18. C
19. A
20. D
Section B: Long Answer Questions (50 marks)

There are 10 questions in this section. Each question is worth 5 marks. Candidates should answer ALL questions in this section.

Answers must be written in the space provided. If there is not enough space, write on the spare pages provided at the end of the paper. Make sure you clearly indicate the questions you are answering.

21. What is Dynamic Routing? Use an example to explain how it works?

The internet comprises of computers connected in complex topologies which may change over time. Messages between two computers must be routed through this complex topology. Routing tables store the various routes to network destinations. In dynamic routing these routing tables are updated automatically, based on information carried by routing protocols. Dynamic routing allows the internet to act nearly autonomously in avoiding network failures and blockages.

22. Explain how client-side form validation is different from server-side form validation? What benefits does each bring?

Client side validation is faster, but is limited to validating data that is available to at the client side. Client side validation is not suitable for checking data that is security sensitive such as passwords. One should perform as much client side validation as possible before submitting to the server. Server side validation is slower since information has to be sent between the client and server. However, at the server side, one can validate data against information that is only available on the server (eg database data, passwords etc).
23. List two problems of using HTML as a design language. What’s the general solution? How does the solution solve the two problems you listed?

HTML contains both logical and physical constructs. Different browsers can render the same HTML differently. Using CSS allows one to separate logical and physical elements. They go a long way to making different browsers render the same HTML the same way.

24. Use an example to explain how DHTML works.

In the following DHTML example, an alert popup is displayed when user clicks on the input text box.

```html
<html>
<head>
<script type="text/javascript">
function message()
{
    alert("This alert box was triggered by the onclick event handler");
}
</script>
</head>

<body>
<form>
Enter your name: <input type="text" onclick="message()" size="20">
</form>

</body>
</html>
```

25. When you would use a linear site structure in preference to a hierarchical one? How would you implement a linear structure?

Linear structure works best for Web pages with a clearly defined order

In the hierarchical structure, the pages are linked going from the most general page down to more specific pages. Users easily move from general to specific & back again

In a linear structure, each page is linked with the pages that follow and precede it in an ordered chain
26. Write a JavaScript function that calculates the number of days left till the Christmas Date.

```javascript
<html>
<body>
<script type="text/javascript">
    var dt = new Date();   // current date
    var xmas = new Date(2010,12,25);  // this xmas
    var mS = xmas-dt;    // calc mS from now to new year
    var days = mS/(1000*60*60*24);  // convert mS to days
    days = Math.floor(days);   // round down to nearest integer
    document.write("days to xmas = "+days);
</script>
</body>
</html>
```

27. Explain the relationship between a Document Tree and how a contextual selector like `p em {color:red}` works.

All html elements in a web page can be organized into a document tree. The root of this tree is the document element. Each element is linked to its parent and its children elements if they exist. `p em` specifies all `em` elements that are descendents of `p` elements.
28. Describe the situations of using External Style Sheets, Embedded Style Sheets and Inline Styles. Use both CSS and HTML code to explain how to use each type of the styles.

External style is used to provide consistent styles to many web pages.

```html
<head>
  <link rel="stylesheet" type="text/css" href="mystyle.css" />
</head>
```

Embedded style is used to provide styling to a given web page.

```html
<head>
  <style type="text/css">
    h2 style="text-align:center; font-size:10px">
  </style>
</head>
```

Inline style is used to provide styling to a given element in a web page.

```html
<body>
  <h1 style="text-align:center">
  </body>
```

29. Explain the use of each of the following: URI, URL, and URN.

The URI is not a Web address. A URI identifies a physical or an abstract resource.
A physical resource is a resource one can access and work with such as a file, a Web page, or an e-mail address. A URL is one type of URI.

An abstract resource is one that doesn’t have any physical existence, the URI is used as an identifier or an ID.

A proposed type of URI is the URN or Universal Resource Name.

A URN is a persistent resource identifier, meaning the user need only know the name of a resource. An agency would then retrieve a copy of the resource independent of its location.
URNs take the form:

```text
urn:NID:NSS
```
30. Discuss why a namespace is important? How to declare and use a namespace?

When using more than one XML dictionaries in the one document, there may be a name clash. Use of namespaces resolves this problem. Syntax for declaring namespace:

xmlns:prefix="URI"

Where URI is a Uniform Resource Identifier that assigns a unique name to the namespace, and prefix is a string of letters that associates each element or attribute in the document with the declared namespace. For example,

<mode xmlns:mod="http://jacksonelect.com/models">

declares a namespace with the prefix “mod” and the URI http://jacksonelect.com/models

31. Part 1:

```xml
<?xml version="1.0" encoding="ISO-8859-1" ?>
<?xml-stylesheet type="text/css"?>

parts {
    display:block;
    margin:1em;
}

parts message {
    display:block;
    color:#FFFFFF;
    font-weight:bold;
    font-size:2em;
    background-color:#000000;
}

parts part {
    display:block;
    border-left:1px dashed #000000;
}```
31. Part 2: In exam, you will be expected to fill in the “etc…”
Welcome to Perth

A place which is held sovereign amongst all Western Australians. Host to numerous war memorials and the venue for the annual ANZAC Day celebrations, King's Park is a place of reflection and appreciation.

There is a place that every surfer and every wine fanatic knows about, and that is the Margaret River region in WA's South-West.

Register for a two day tour to Margaret River

```
<table>
  <tr>
    <td>email:</td>
    <td><input type="text" name="email" /></td>
  </tr>
  <tr>
    <td>date:</td>
    <td><input type="text" name="date" value="dd/mm/yy" /></td>
  </tr>
  <tr>
    <td>flexible on date:</td>
    <td>
      <input type="radio" name="yes" value="yes">Yes
      <input type="radio" name="no" value="no">No
    </td>
  </tr>
  <tr>
    <td>where are you from:</td>
    <td>
      <select name="from">
        <option value="WA">WA</option>
        <option value="other">Other Australian States</option>
        <option value="overseas">Overseas</option>
      </select>
    </td>
  </tr>
</table>
```