



**UNIVERSITY OF COLOMBO, SRI LANKA**

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY ( EXTERNAL)**

*Academic Year 2020 – 1<sup>st</sup> Year Examination – Semester 2*

***IT 2406 - Web Application Development I***  
***Multiple Choice Question Paper***

***(TWO HOURS)***

**Important Instructions :**

- The duration of the paper is **2 (two) hours**.
- The medium of instruction and questions is English.
- The paper has **40 questions** and **15 pages**.
- All questions are of the **MCQ** (Multiple Choice Questions) type.
- All questions should be answered.
- Each question will have 5 (five) choices with **one or more** correct answers.
- All questions will carry **equal** marks.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from 0 (*All the incorrect choices are marked & no correct choices are marked*) to +1 (*All the correct choices are marked & no incorrect choices are marked*).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.  
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**
- Calculators are **not** allowed.
- *All Rights Reserved.*

- 1) Here is a HTML program with some blanks to display the figure caption.

<... **A** ...> <... **B** ...> <... **C** ...>Fig.1-Rose Flower<... **D** ...> <... **E** ...>

The correct order of tokens for filling the blanks is;

- (a) figure, img /, figcaption, /figcaption, /figure
- (b) img /, figcaption, figure, /figure, /figcaption
- (c) figcaption, img /, figure, /figure, /figcaption
- (d) figcaption, img /, /figure, /figcaption, figure
- (e) figure, src, figcaption, /figcaption, /figure

Answer: (a)

- 2) The following HTML code segment generate a frameset. Select which of the figures given below will resemble most closely the frame generated from the below code.

```
<frameset rows="*,80" cols="*" frameborder="1" border="1">
<frameset cols="*,80" frameborder="1" border="1">
<frame src="a.htm" name="main">
<frame src="b.html" name="right" scrolling="NO" noresize>
</frameset>
<frame src="c.html" name="bottom" scrolling="NO" noresize>
</frameset>
```

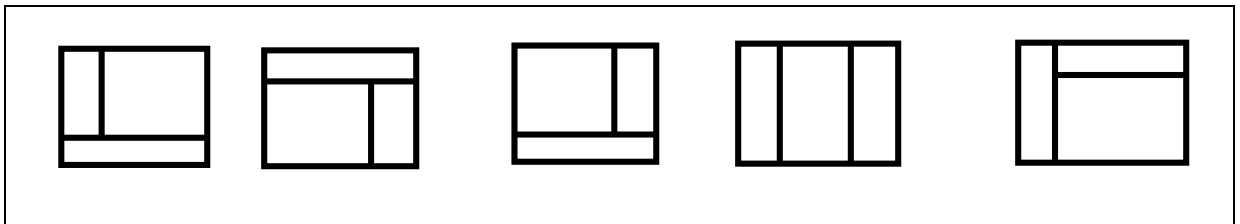
(a)

(b)

(c)

(d)

(e)



Answer: (d)

- 3) Here is a HTML program with some blanks letter (A) to (D) to display the output as shown in the picture below? Fill in the blanks with the appropriate token for the question.

*Sri*

**Lanka**

<... **A** ... **B** ...="font-style: italic "> Sri <... **C** ... style= "... **D** ...">  
Lanka <... **E** ...> <... **F** ...>

- (a) `div, p, style, "font-weight: bold", /div, /p`
- (b) `p, style, div, "font-weight: bold", /div, /p`
- (c) `p, div, /div, "font-weight: bold", style, /p`
- (d) `div, p, style, "font-weight: bold", /p, /div`
- (e) `/div, style, p, "font-weight: bold", div, /p`

Answer: (b)

- 4) Which of the following tags, attributes, and values go with the image mapping?

- (a) `area shape="rect", img /, map, coords="4,36,60,80" href="home.html" alt="xxx", /map`
- (b) `area, map, img shape="rect" coords="4,36,60,80" href="home.html" alt="xxx", /map`
- (c) `area shape="rect" coords="4,36,60,80" href="home.html" alt="xxx", map, img /, /map`
- (d) `img /, map, area shape="rect" coords="4,36,60,80" href="home.html" alt="xxx", /map`
- (e) `map /, img /, area shape="rectangular" coords="4,36,60,80" href="home.html" alt="xxx", /map`

Answer: (d)

- 5) Which of the following HTML tags that can use "src" as an attribute?

- (a) `<frame> <iframe> <img> <source> <bgsound> <embed>`
- (b) `<link> <iframe> <img> <source> <bgsound> <embed>`
- (c) `<frame> <iframe> <img> <source> <bgsound> <video>`
- (d) `<frame> <audio> <img> <source> <bgsound> <embed>`
- (e) `<frame> <iframe> <link> <source> <img> <embed>`

Answer: (a)

- 6) Here is a HTML program with some blanks to display the legend.

```
<... A ...><... B ...><... C ...>Personalia:<... D ...> Name:<... E ...><... F ...> Email:
<... G ...><... H ...><... I ...>
```

The correct order of tokens for filling the blanks is

- (a) `form, fieldset, legend, /legend, input, br /, input, /fieldset, /form`
- (b) `legend, form, fieldset, input, br /, input, /fieldset, /form, /legend,`
- (c) `form, legend, fieldset, input, br /, input, /fieldset, /legend, /form`
- (d) `fieldset, form, legend, /legend, input, br /, input, /form, /fieldset,`

(e) form, fieldset, legend, /legend, /fieldset, input, br /, input, /form

Answer: (a)

7) Which of the following attributes can be written with the <table> tag?

- (a) cellpadding, cellspacing, width, caption, align, border
- (b) cellpadding, cellspacing, width, style, align, border
- (c) cellpadding, cellspacing, src, height, align, border
- (d) cellpadding, cellspacing, href, tr, td, border
- (e) cellpadding, cellspacing, width, height, tr, td

Answer: (b)

8) Which of the following HTML code is/are correct regarding the “Date” input types?

- I. <form> Birthday (date and time): <input type="datetime-local" name="bdaytime" /> </form>
- II. <form> E-mail: <input type="emailaddress" name="email"> </form>
- III. <form>Enter a date before 1980-01-01:  
<input type="date" name="bday" max="1979-12-31" /> </form>

| (a)    | (b)     | (c)           | (d)      | (e)            |
|--------|---------|---------------|----------|----------------|
| I Only | II Only | I and II Only | III Only | I and III Only |

Answer (e)

9) Which of the following HTML tags that can use “name” as an attribute?

- (a) <map> <input> <frame> <a> <select> <textarea> <iframe>
- (b) <link> <input> <frame> <a> <dt> <textarea> <iframe>
- (c) <frameset> <input> <frame> <a> <select> <option> <iframe>
- (d) <map> <input> <frame> <order> <select> <hr> <iframe>
- (e) <img> <input> <frame> <a> <select> <body> <iframe>

Answer: (a)

10) Which of the following statement(s) is/are correct regarding the Character Encoding?

- I. ASCII was the first character encoding standard (also called character set). It defines 127 different alphanumeric characters that could be used on the internet.
- II. ASCII does not support numbers (0-9), English letters (A-Z), and some special characters like ! \$ + - ( ) @ < > .

III. ANSI (Windows-1252) was the original Windows character set. It supported 256 different character codes.

(a) I Only

(b) II Only

(c) I and II Only

(d) III Only

(e) I and III Only

Answer: (e)

- 11) Which of the following(s) HTML code set is/are correct regarding the output as shown in the picture below?

| No      | Name  |
|---------|-------|
| 1       | Nimal |
| Details |       |

I. `<table border="1"> <tfoot> <tr> <td colspan=2>Details</td>  
</tr> </tfoot>`

`<tbody> <tr> <td>1</td> <td>Nimal</td> </tr> </tbody>`

`<thead> <tr> <th>No</th> <th>Name</th> </tr> </thead>  
</table>`

II. `<table border="1"> <thead> <tr> <th>No</th> <th>Name</th>  
</tr> </thead>`

`<tbody> <tr> <td>1</td> <td>Nimal</td> </tr> </tbody>`

`<tfoot> <tr> <td colspan=2>Details</td> </tr> </tfoot></table>`

III. `<table border="1"> <tbody> <tr> <td>1</td> <td>Nimal</td>  
</tr> </tbody>`

`<tfoot> <tr> <td colspan=2>Details</td> </tr> </tfoot>`

`<thead> <tr> <th>No</th> <th>Name</th> </tr> </thead>  
</table>`

(a) I Only

(b) II Only

(c) I and II Only

(d) I and III Only

(e) I, II and III Correct

Answer: (e)

- 12) Which of the following CSS code is correct regarding the LESS CSS pre-processor?

- (a) `.small-heading { .large-heading; font-size:14px; }`
- (b) `.small-heading ( .large-heading; font-size:14px; )`
- (c) `.small-heading { .large-heading:font-size:14px; }`
- (d) `.small-heading { ".large-heading" "font-size:14px"; }`
- (e) `.small-heading { ".large-heading"; "font-size:14px"; }`

Answer: (a)

13) Which of the following(s) is/are correct regarding the CSS properties and values?

- (a) `font-family: Times New Roman, Arial`
- (b) `font-style: bold`
- (c) `border-style: dashed`
- (d) `border-color: 4169E1`
- (e) `z-index: inherit`

Answer: (a) (c) (e)

14) What would be the output of the following code?

```
<html><head><style>
div ~ p {
    border: double; width:55;
}
</style></head><body>
<p>Nimal</p><p>Kamal</p><div><p>Mala</p></div><p>Gamini</p>
<p>Kumara</p>
</body></html>
```

| (a)               | (b)               | (c)    | (d)               | (e)               |
|-------------------|-------------------|--------|-------------------|-------------------|
| Nimal             | Nimal             | Nimal  | Nimal             | Nimal             |
| Kamal             | Kamal             | Kamal  | Kamal             | <div>Kamal</div>  |
| Mala              | <div>Mala</div>   | Mala   | Mala              | <div>Mala</div>   |
| <div>Gamini</div> | <div>Gamini</div> | Gamini | Gamini            | <div>Gamini</div> |
| <div>Kumara</div> | <div>Kumara</div> | Kumara | <div>Kumara</div> | <div>Kumara</div> |

Answer (a)

15) What would be the output of the following code?

```

<html><head><style>
div + h3 {
    border: dotted;
}
</style></head><body>
<div><h3>Mango</h3> <h2>Apple</h2><span><h3>Banana</h3>
</span> </div> <h3>Orange</h2> <h2>Papaya</h3>
</body></html>

```

(a) (b) (c) (d) (e)

|               |               |               |               |               |
|---------------|---------------|---------------|---------------|---------------|
| <b>Mango</b>  | <b>Mango</b>  | <b>Mango</b>  | <b>Mango</b>  | <b>Mango</b>  |
| <b>Apple</b>  | <b>Apple</b>  | <b>Apple</b>  | <b>Apple</b>  | <b>Apple</b>  |
| <b>Banana</b> | <b>Banana</b> | <b>Banana</b> | <b>Banana</b> | <b>Banana</b> |
| <b>Orange</b> | <b>Orange</b> | <b>Orange</b> | <b>Orange</b> | <b>Orange</b> |
| <b>Papaya</b> | <b>Papaya</b> | <b>Papaya</b> | <b>Papaya</b> | <b>Papaya</b> |

Answer (b)

- 16) Select the CSS code output of the following Syntactically Awesome Style Sheets (SASS) code.

```

$font-stack: Helvetica, sans-serif;
$primary-color: #333;
body {
font: 100% $font-stack;
color: $primary-color;
}

```

- (a) body {font: 100% Helvetica, sans-serif; color: #333;}
- (b) body {\$font-stack; \$primary-color;}
- (c) body {font= 100% Helvetica, sans-serif=color: #333;}
- (d) body {\$font-stack= font: 100% Helvetica, sans-serif;  
\$primary-color= color: #333;}
- (e) body {font-stack; primary-color;}

Answer: (a)

- 17) “**Mixins** allow document authors to define patterns of property-value pairs, which can then be reused in other rule sets” Select the CSS code output of the following code.

```

@mixin notification {
padding:10px;
border-radius:5px;
font-size:1em;
}

```

```
.error{
@include notification;
background:red;
color:white;
}
```

- |  |
|--|
| (a) <code>.error{@include notification; @mixin notification; }</code>  |
| (b) <code>.error{padding:10px; border-radius:5px; font-size:1em; background:red; color:white; }</code>   |
| (c) <code>.error{include notification; mixin notification; }</code>  |
| (d) <code>.error{@include notification= background:red; color:white; @mixin notification= padding:10px; border-radius:5px; font-size:1em; }</code> |
| (e) <code>.error{include notification: background:red; color:white; @mixin notification: padding:10px; border-radius:5px; font-size:1em; }</code>  |

Answer: (b)

18) Which of the following statement is correct regarding the at-rules of the SASS?

- |   |
|---|
| (a) <code>@if lightness(\$color) &gt; 30% {background-color: black ; @else background-color: white;}</code>   |
| (b) <code>if lightness(\$color) &gt; 30% {background-color: black;} else { background-color: white;}</code>   |
| (c) <code>@if lightness(color) &gt; 30% {background-color: black;} @else { background-color: white;}</code>   |
| (d) <code>if lightness(\$color) &gt; 30% {background-color: black;};{ background-color: white;}</code>        |
| (e) <code>@if lightness(\$color) &gt; 30% {background-color: black;} @else { background-color: white;}</code> |

Answer: (e)

19) Here is a HTML code segment with some blanks to add a new element. Fill in the blanks with the appropriate tags.

```
<...A...> <...B...>document.createElement("para")<...C...>
<...D...> para {display: block;background-color: #dddddd; }
<...E...> <...F...>
```

- |   |
|---|
| (a) <code>&lt;body&gt; &lt;script&gt; &lt;/script&gt; &lt;style&gt; &lt;/style&gt; &lt;/body&gt;</code> |
|---|



(b) <head> <body> </head> <style> </style>

(c) <head> <para> </para> <style> <script> </script> </head>

(d) <head> <script> </script> <style> </style> </head>

(e) <head> <para> </para> <style> <body> </body> </head>

Answer: (d)

20) What would be the output of the following *javascript*?

```
<html> <body onload = son();> <script type =  
"text/javascript">  
    var myVar = "Nimal";  
    function son( ) {  
        var myVar = "Sarath";  
        document.write(myVar);  
    }  
</script> </body> </html>
```

- |                    |                    |            |
|--------------------|--------------------|------------|
| (a) Nimal          | (b) Sarath & Nimal | (c) Sarath |
| (d) Nimal & Sarath | (e) Error output   |            |

Answer: (c)

21) Which of the following statement(s) is/are correct regarding the “*javascript* statement”?

- |  |
|--|
| I. The semicolon (;) does not use to separate statements   |
| II. The operator has two operands on each of its sides, and the value of the right operand is assigned to the left one |
| III. Values of right operand must always be known, if not, and error is generated                                      |

- |        |         |          |                |                 |
|--------|---------|----------|----------------|-----------------|
| (a)    | (b)     | (c)      | (d)            | (e)             |
| I Only | II Only | III Only | I and III Only | II and III Only |

Answer: (e)

22) What would be the output of the following *javascript* code?

```
<html>  
  <body>  
    <script type = "text/javascript">  
      var x = 1;  
      while (x < 20) {  
        if (x == 5) {  
          break;  
        }  
        x = x + 1;  
        document.write( x + "<br />");  
      }  
    </script>  
  </body>  
</html>
```

```

    }
    </script>
  </body>
</html>

```

| (a) | (b) | (c) | (d) | (e) |
|-----|-----|-----|-----|-----|
| 2   | 1   | 1   | 1   | 2   |
| 3   | 2   | 2   | 2   | 3   |
| 4   | 3   | 3   | 3   | 4   |
| 5   | 4   | 4   | 4   | 5   |
|     | 6   | 5   | 5   | 6   |

Answer: (a)

23) What would be the output of the following *javascript* code?

```

<html> <body> <script type = "text/javascript">
    var x = 1;
    document.write();
    while (x < 5) {
        x = x + 1;
        if (x == 3) {
            continue;
        }
        document.write( x + "<br />");
    }
    document.write();
</script> </body> </html>

```

| (a) 2 | (b) 5 | (c) 5 | (d) 2 | (e) 1 |
|-------|-------|-------|-------|-------|
| 4     | 4     | 4     | 5     | 4     |
| 5     | 3     | 2     | 7     | 5     |

Answer: (a)

24) What would be the output of the following *javascript* code?

```

<html> <body> <script type = "text/javascript">
    var a = 0;
    document.write();
    do {
        document.write("Count a : " + a + "<br />");
        a++;
    }
    while (a < 5);
    document.write ("Loop completed!");

```

</script> </body> </html>

| (a)        | (b)        | (c)        | (d)        | (e)        |
|------------|------------|------------|------------|------------|
| a : 4      | a : 0      | a : 1      | a : 0      | a : 1      |
| a : 3      | a : 2      | a : 2      | a : 1      | a : 2      |
| a : 2      | a : 4      | a : 3      | a : 2      | a : 3      |
| a : 1      | a : 2      | a : 4      | a : 3      | a : 4      |
| a : 0      | a : 4      | a : 5      | a : 4      | a : 4      |
| completed! | completed! | completed! | completed! | completed! |
|            |            | !          |            |            |

Answer: (d)

- 25) Which of the following statement(s) is/are correct regarding the describing of Document Type Declaration (DTD)?

- I. DTD provides a framework to validate XML documents.
- II. DTD defines the structure of an XML
- III. DTD provides common rules to define the structure of the XML

| (a)    | (b)           | (c)      | (d)            | (e)             |
|--------|---------------|----------|----------------|-----------------|
| I Only | I and II Only | III Only | I and III Only | All are correct |

Answer: (e)

- 26) Which of the statement(s) is/are correct regarding the XML declaration with all parameters?

- I. <?xml version = "1.0" encoding = "UTF-8" standalone = "no"?>
- II. <xml version = "1.0" encoding = "UTF-8" standalone = "no">
- III. <?xml version = '1.0' encoding = 'iso-8859-1' standalone = 'no'?>

| (a)    | (b)     | (c)      | (d)           | (e)            |
|--------|---------|----------|---------------|----------------|
| I Only | II Only | III Only | I and II Only | I and III Only |

Answer: (e)

- 27) Which of the following statement(s) is/are correct regarding the structure of an XML document

- I. The Document Object Model (DOM) is the foundation of XML.
- II. DOM is a way of describing nodes and the relationships between them.
- III. A DOM document is **not** a collection of nodes or pieces of information organized in a hierarchy.

| (a)    | (b)     | (c)      | (d)           | (e)            |
|--------|---------|----------|---------------|----------------|
| I Only | II Only | III Only | I and II Only | I and III Only |

Answer: (d)

28) Which of the following statement(s) is/are correct regarding the XML Document Type Declaration (DTD)?

- I. There can be more than one root element
- II. XML attribute's values must be enclosed in double quotation
- III. Documents must have starting and closing tag.

| (a)    | (b)     | (c)      | (d)           | (e)             |
|--------|---------|----------|---------------|-----------------|
| I Only | II Only | III Only | I and II Only | II and III only |

Answer: (e)

29) What is the correct command to install *ExpressJS* globally using the Node Package Manager?

- (a) `$ npm install express`
- (b) `$ npm install -g express`
- (c) `$ npm express update`
- (d) `$ npm install express --save`
- (e) `$ npm express install`

Answer: (b)

30) Which of the following statement(s) is/are correct regarding the *Node.js* core modules?

- I. were compiled into the Node binary.
- II. come pre-bundled with Node.
- III. were installed by using NPM.

| (a)    | (b)     | (c)      | (d)           | (e)            |
|--------|---------|----------|---------------|----------------|
| I Only | II Only | III Only | I and II Only | I and III only |

Answer: (d) I and II

- 31) The application object contains the methods which help to configure the *Express* application. What method can be used to set the environment variables that the Express will use in its configuration?

|                             |   |                          |
|-----------------------------|---|--------------------------|
| (a) app.get(name)           | (b) app.engine(ext, callback)                     | (c) app.set(name, value) |
| (d) app.use(path, callback) | (e) app.route(path).VERB([callback...], callback) |                          |

Answer: (c)

- 32) Maintaining a proper application folder structure is a good practice in software engineering. For this, two approaches can be identified, such as horizontal and vertical folder structure. In the horizontal folder structure, what is the folder which used to keep the *Express* application logic?

|            |              |           |
|------------|--------------|-----------|
| (a) config | (b) public   | (c) views |
| (d) app    | (e) services |           |

Answer: (d)

- 33) Which file helps to organize the application dependencies of an *Express* application?

|                    |               |                |
|--------------------|---------------|----------------|
| (a) package.json   | (b) server.js | (c) express.js |
| (d) application.js | (e) config.js |                |

Answer: (a)

- 34) What is the response object method which used to redirect the request to a given URL in an *Express* application?

|  |                                 |
|--|---------------------------------|
| (a) res.cookie(name, value, [options]) | (b) res.set(field, [value])     |
| (c) res.status(code)                   | (d) res.redirect([status], url) |
| (e) res.send([body status], [body]):   |                                 |

Answer: (d)

- 35) Which is the correct code segment, that can be used to create a new *Express* application object.

|   |   |
|---|---|
| (a) var express = get('expressjs');<br>var app = express();       | (b) var express = require('express');<br>var app = express(); |
| (c) var express = include('expressjs');<br>var app = express();   | (d) var express = post('express');<br>var app = express();    |
| (e) var expressjs = include('expressjs');<br>var app = express(); |   |

Answer: (b)

- 36) Layout system of Bootstrap helps in creating responsive mobile-friendly web applications. Select the correct layout type available in Bootstrap to create responsive web applications.

- |                   |                  |                     |
|-------------------|------------------|---------------------|
| (a) Linear layout | (b) Fluid layout | (c) Relative layout |
| (d) Grid layout   | (e) Fixed layout |                     |

Answer: (b)

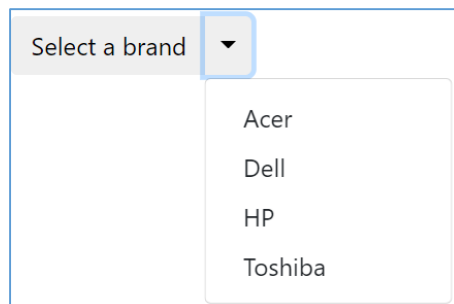
- 37) The bootstrap grid system consists of rows and columns. Select the correct meaning of following class definition in Bootstrap.

***.col-xs-4***

- |   |
|---|
| (a) Four column units wide space for normal desktop computers<br>(b) Total screen divides to four segments for mobile phones<br>(c) Total screen divides to four segments for large desktop computers<br>(d) Four column units wide space for mobile phones<br>(e) Four column units wide space for tablets |
|---|

Answer: (d)

- 38) Following image shows a drop down created using Bootstrap and HTML. Select the correct answer related to the drop-down component of the image.

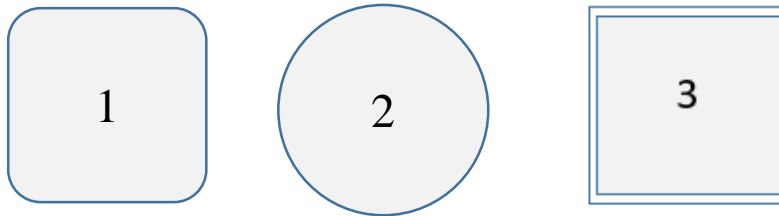


- I. “btn-group” bootstrap class can be used to create the button group
- II. “btn-default” class is used for the buttons in the button group
- III. Unordered list with “dropdown-menu” bootstrap class is used to create the menu

- |                    |                   |
|--------------------|-------------------|
| (a) I Only         | (b) II Only       |
| (c) III Only       | (d) I and II Only |
| (e) I and III Only |                   |

Answer: (d)

- 39) Select the correct image component for the following image formats available in Bootstrap.



- i) `<img src = "profile.png" class = "img-rounded">`
- ii) `<img src = "profile.png" class = "img-round">`
- iii) `<img src = "profile.png" class = "img-circular">`
- iv) `<img src = "profile.png" class = "img-circle">`
- v) `<img src = "profile.png" class = "img-thumbnail">`
- vi) `<img src = "profile.png" class = "img-thumb">`

Choose the correct answer.

- |                                  |                               |
|----------------------------------|-------------------------------|
| (a) 1- ii) , 2- iv) , 3 – vi)    | (b) 1 - i), 2 – iv) , 3 – v)  |
| (c) 1 – ii), 2 – iii) , 3 – v)   | (d) 1 – i) , 2 – iv) , 3 – v) |
| (e) 1 – ii) , 2 – iii) , 3 – vi) |                               |

Answer: (d)

- 40) Provide the correct button colour defined by the following contextual classes of Bootstrap in the given order below.

- i) `.btn-primary`      ii) `.btn-danger`    iii) `.btn-warning`

- |                         |
|-------------------------|
| (a) Red, Orange, Green  |
| (b) Orange, Red, Yellow |
| (c) Blue, Red, Yellow   |
| (d) Blue, Orange, Red   |
| (e) Orange, Blue, Red   |

Answer: (c)

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