

# University of St Andrews



## DECEMBER 2017 EXAMINATION DIET

### SCHOOL OF COMPUTER SCIENCE

**MODULE CODE:** IS5103

**MODULE TITLE:** Web Technologies

**EXAM DURATION:** 2 hours

**EXAM INSTRUCTIONS**

- (a) Answer **three** questions.
- (b) Each question carries 20 marks.
- (c) Answer questions in the script book.

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YOU ARE INSTRUCTED TO DO SO.**

1.

- (a) The HTML5 specification is a recommended web standard. Discuss the motivation behind the standard, and the process involved in becoming a recommended web standard.

[10 marks]

- (b) Explain using text or an annotated diagram the process by which a browser displays the following web page.

`https://www.bbc.co.uk/news/education`

[5 marks]

- (c) Discuss 5 significant challenges facing responsive web solutions.

[5 marks]

**[Total 20 marks]**

2.

- (a) CSS styles can be inline, embedded, stored externally, imported or specified for media. Describe each method using appropriate code to illustrate your answer.

[10 marks]

- (b) A number of CSS3 modules are currently under development. Using the style rule below, explain how browsers facilitate this.

```
article {  
    -moz-box-shadow:10px 10px 5px #000000;  
    -webkit-box-shadow:10px 10px 5px #000000;  
    box-shadow:10px 10px 5px #000000;  
}
```

[5 marks]

- (c) You are tasked with coding a design using non-standard web fonts, how would you proceed?

[5 marks]

**[Total 20 marks]**

3.

Examine the following mark-up, designed to collect voter details on a voting page.

```
<form action="vote.php" method="post" name="formvote"
  id="formvote">
  <fieldset>
    <legend>Your Voter Details</legend>
    <p>Please supply a voter name, password, your email
    address and the date, when <strong>complete</strong>
    press the submit button.</p>
    <p>
      <label for="name">Username: (required)</label>
      <input name="name" id="name" type="text"
        tabindex="1"required> </p>
    <p>
      <label for="psswd">Password:</label>
      <input name="psswd" id="psswd" type="password"
        tabindex="2" required> </p>
    <p>
      <label for="emailaddress">Email: (required)</label>
      <input type="email" name="email" id="email"
        placeholder="Enter a valid email address" required>
    </p>
    <p>
      <label for="reg-date">Date:</label>
      <input type="date" name="reg" id="reg"
        tabindex="3"></p>
    <p>
      <input name="status" type="hidden" id="status"
        value="unconfirmed"> </p>
    <p>
      <input name="submit" type="submit" id="submit"
        tabindex="4" accesskey="s" value="Register Now"></p>
  </fieldset>
  <p>Alternatively <a href="form.pdf">print our form </a>
  and send by email.</p>
</form>
```

(a) Describe, using text or an annotated diagram, what the form would look like when rendered in a browser and what happens when the form is submitted.

[10 marks]

(b) Using the source code to illustrate your answer, describe the usability and accessibility features used to comply with the POUR principles of WCAG 2.0.

[10 marks]

**[Total 20 marks]**

4.

- (a) Provide an effective business case for an online video rental business to commit resources to the implementation of an accessible website.

[10 marks]

- (b) Examine the following html page and linked style sheets. Explain in terms of inheritance, how each element would be displayed by a printer.

[10 marks]

index.html

```
<!DOCTYPE html>
<head>
  <title>Design and Semantics
  </title>
  <link href="page-styles.css"
    rel="stylesheet"/>
  <link href="print.css"
    rel="stylesheet" media="print"/>
</head>
<body>
  <header>
<h1>The role of W3C standards</h1>
<div id="pics">
</div>
  </header>
  <section>
<h2> Meaning</h2>
<p> An understanding of <strong>
markup </strong> and CSS is
essential. More information visit <a
href="http://www.dow.com">Dow's
tutorial site</a>
</p>
<h3>Presentation Logic</h3>
<p>Design using CSS</p>
  <article>Web standards are the core
of web accessibility</article>
</section>
<footer><p>Our guide available via <a
href="http://www.web.ac.uk/guide.html
">Standrads for WCAG 2.0 POUR
Guide</a></p>
</footer>
</body>
</html>
```

page-styles.css

```
body{
  color: blue;
  background-color: yellow;
  font-family: Tahoma, Geneva, sans-
serif;}
header{
  background-color: rgba(255, 0,
0, .75);}
h1 {
  font-family: calibri;
  text-shadow:5px 5px 5px #000000;}
p {
  color: brown;
  font-size: small;}
section article{
  background-color: red;}
```

print.css

```
body {
  color : #000000;
  line-height: 1.5;
  background : #ffffff;
  font-size : 12pt;
}
@page { margin: 10%;
}
a:after {
  content: " (" attr(href) ")";
}
#pics{
  display : none;
}
```

[Total 20 marks]

END OF PAPER