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UNIVERSITY OF SURREY

Faculty of Engineering & Physical Sciences

Department of Computer Science

Undergraduate Programmes in Computing

Module COMM049; 15 Credits

HTML5 and CSS3 for Mobile Applications

FHEQ Level 7 (MSc) Examination

Time allowed: Two hours   Semester 1 2015/2016

Answer all three questions

The total marks for each question are indicated by square brackets [ ].

Where appropriate the mark carried by an individual
part of a question is indicated in square brackets [ ].
Approved calculators allowed

1:      This question covers general aspects of mobile first design.

    (a) The course provided some key guidelines for designing mobile websites/applications. Analyse the reasons why following these guidelines will help the users.

[10 marks]

    (b) Describe how you might redesign the screen in Figure 1 to enable it to more easily fit onto a single smartphone screen. You may answer by sketching out your solution.

[5 marks]

Figure 1

QUESTION 1 CONTINUES ON THE NEXT PAGE

(c)   HTML5 provides some new input types compared with HTML4. Why are these so important for mobile devices? Give three examples of their use.

[8 marks]

(d)   A key difference between a mobile version of a website or application over a desktop based one is that users will primarily be using touch to interact with it, rather than a mouse or keyboard. The course provided a set of 5 key guidelines to support ease of performing actions through touch. Describe these five guidelines.

[10 marks]

Total   [33 marks]

SEE NEXT PAGE

2:      This question covers a range of aspects of developing with the jQuery.

    (a) Which of the following statements are true:
            (i) jQuery is a JSON Library;
            (ii) jQuery is a JavaScript library

                                                                                    [2 marks]

    (b) Which well-known syntax is jQuery's method of selecting DOM
        elements based on?

                                                                              [2 marks]

    (c) What sign does jQuery use as a shortcut for jQuery?

                                                                              [1 mark]

    (d) What does the selector `$("div")` select in jQuery?
        (i) All `div` elements
        (ii) The first `div` element   [2 marks]

    (e) What is the correct jQuery code to set the background colour of all `p`
        elements to red?
        (i) `$("p").style("background-color","red");`
        (ii) `$("p").change("background-color","red");`
        (iii)`$("p").css("background-color","red");`
        (iv)`$("p").layout("background-color","red");`

                                                                     [2 marks]

    (f) Which jQuery method is used to hide selected elements?
        (i) `display(none)`
        (ii) `visible(false)`
        (iii)`hidden()`
        (iv)`hide()`

                                                                       [2 marks]

    (g) Which jQuery method is used to perform an asynchronous http request?
        (i) `jQuery.ajaxAsync()`
        (ii) `jQuery.ajaxSetup()`
        (iii)`jQuery.get()`
        (iv)`jQuery.ajax()`

                                                                       [2 marks]

    (h) What is the correct css code for making all div elements 100pixels high?
        (i) `$("div").height = "100"`
        (ii) `$("div").style(height=100)`
        (iii)`$("div").height(100)`
        (iv)`$("div").yPos(100)`   [2 marks]

(i) Consider the static HTML of Figure 2. Suppose that you now import the JavaScript of Figure 2 into the same HTML document.

    (i) Describe from the user's perspective the dynamic behaviour that is now associated with the document (i.e. what the user will see).

[5 marks]

    (ii) Explain from a technical perspective how the code in Figure 3 creates the behaviour described in part (i) above.　[10 marks]

    (iii) Modify the JavaScript code so that the click function only applies to the paragraph of class "bear"　[3 marks]

```
<body>
    <h1 id="myTitle">Some jQuery examples</h1>
    <p id="myParentDiv">The fun starts here:</p>
    <p>And ends here!</p>
</body>
```
<div align="center">Figure 2</div>

```
<script src="jquery.js"></script>
<script>
  $(function(){
    $('#myTitle')
    .bind('mouseover', function(event){
      $("<p class='bear'>I have a bear!</p>
         <p>I don't</p>")
         .click(function(){
                alert("I'm a bear!");
              }).end().appendTo("#myParentDiv");
    })
  })
</script>
```
<div align="center">Figure 3</div>

Total [33 marks]

3:     This question covers a range of aspects of the AngularJS framework. Please write your answer choices in the answer book in those cases where multiple choices are provided. <u>Explain your answers.</u> This question is not relevant for 2017

(a) Which of the following is true about ng-model directive?
   i. ng-model directive binds the values of AngularJS application data to HTML input controls.
   i. ng-model directive creates a model variable which can be used with the html page and within the container control having ng-app directive.
   ii. Both of the above.
   iii. None of the above.

[4 marks]

(b) What is Model in MVC?
   i. Model represents server side data.
   ii. Model represents data stored in database.
   iii. Model is the lowest level of the pattern responsible for maintaining data.
   iv. None of the above.

[3 marks]

(c) Which of the following is true about orderby filter?
   i. orderby filter orders the array based on provided criteria.
   ii. orderby filter is used to filter the array to a subset of it based on provided criteria.
   iii. Both of the above.
   iv. None of the above.

[3 marks]

(d) $rootScope is the parent of all of the scope variables.
   i. True
   ii. False

[2 marks]

(e) Which of the following is true about AngularJS service?
   i. Services are JavaScript functions.
   ii. Services are responsible to do specific tasks only.
   iii. Inbuilt services are always prefixed with $ symbol.
   iv. All of the above.

[4 marks]

(f) On which of the following types of component can we create a custom directive?
   i. Element directives
   ii. Attribute
   iii. CSS
   iv. All of the above.

[4 marks]

QUESTION 3 CONTINUES ON THE NEXT PAGE

(g) ng-model binds the values of AngularJS application data to HTML input controls.
  i. True
  ii. False

[2 marks]

(h) What is the effect of including the novalidate directive within a form declaration?

[3 marks]

(i) What is the purpose of the $invalid flag?

[3 marks]

(j) What is a factory method used for?

[3 marks]

(k) Can Templates just be a single file?

[3 marks]

Total [34 marks]

END OF PAPER

INTERNAL EXAMINER: Prof. Paul Krause
EXTERNAL EXAMINER: Dr Andrew MacFarlane