

**DEPARTMENT OF COMPUTER SCIENCE**

Second Year Progress Test Week 21 2019-20

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**WEB APPLICATION PROGRAMMING**

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Time allowed: **30 minutes**

Candidates must answer **ALL** questions.

The paper consists of **TWENTY** questions in total. All questions are of equal weight.

The progress test is worth 10% of the total assessment for this module.

**THE QUESTION PAPER MUST NOT BE REMOVED AND WILL BE COLLECTED WITH YOUR ANSWER SHEET.**

**CANDIDATES MUST REFER TO THE FOLLOWING PAGES FOR FURTHER INSTRUCTIONS.**

**Please do not leave your seat until the end of the test unless you are given special permission by an invigilator.**

**Do not communicate in any way with any other candidate in the room.**

**Do not open the question paper until told to do so.**

**All answers must be written on the machine-readable form.**

**At the end of the test, remain seated until your papers have been collected and you have been told you may leave.**

**Answers must be written on the multiple choice answer sheet (machine-readable form).** Note that there is only one choice that constitutes the correct answer to each question. The correct answer, in this context, is the most accurate and complete answer to the question, among those given.

**ON THE MACHINE READABLE FORM PLEASE ENSURE THAT YOU COMPLY WITH THE FOLLOWING REQUIREMENTS:**

- (i) Write your name in the box headed **“Candidate Name”**.
- (ii) Write your **“Student Registration Number”** in the box provided, and enter the same information by using the optical marks in the columns beneath the boxes (see example attached).
- (iii) Do not write anything in the section headed **“Seat Number”**.
- (iv) Write your **“Course Code”** in the box provided, and enter the same information by using the optical marks in the columns beneath the boxes (see example attached).

**THE CORRECT ANSWER FOR EACH QUESTION SHOULD BE MARKED BY STRIKING THROUGH THE CORRESPONDING LETTER ON THE MACHINE READABLE FORM.**

**The following information has been entered as an example on the sheet attached:**

Registration number 0403579 would be entered using the optical marks in the columns by striking through the characters in the seven columns as follows:

[ 0 ] [ 4 ] [ 0 ] [ 3 ] [ 5 ] [ 7 ] [ 9 ]

The course code for module CE112 would be entered as follows:

[ C ] [ E ] [ 1 ] [ 1 ] [ 2 ]

If you think that answer D is the correct answer for Question 1, then you should strike through the letter ‘D’ as shown below:

1. [ A ] [ B ] [ C ] [ ~~D~~ ]

**NOTE: If more than one answer is marked for a particular question, your answer for that question will be ignored.**

Candidates must answer all 20 questions. Answers must be written on the machine-readable form.

### **Question 1**

The CSS rule `.chosen {color:red}` would be applied to which of the following?

- [A] Any elements within any attribute with value `chosen`
- [B] All elements with a `class` attribute with value `chosen`.
- [C] Any element with an `id` attribute with value `chosen`
- [D] All elements with a `chosen` attribute

### **Question 2**

The CSS rule `blockquote i {font-style:normal}` would be applied to which of the following

- [A] All `<blockquote>` elements with a `class` attribute with value `i`
- [B] All `<blockquote>` elements and all `<i>` elements
- [C] All `<i>` elements within `<blockquote>` elements
- [D] All `<blockquote>` elements within `<i>` elements

### **Question 3**

The style of an element may be specified in a number of CSS style sheets. Which of the following has the highest precedence?

- [A] A style sheet within the document.
- [B] An external style sheet accessed using a `<link>` tag.
- [C] A default browser style sheet.
- [D] A user style sheet.

#### **Question 4**

Which of the following is *not* a primitive type in JavaScript?

- [A] number
- [B] character
- [C] boolean
- [D] string

#### **Question 5**

Which of the following is *not* true?

- [A] JavaScript is more strictly typed than Java.
- [B] The types of function arguments in JavaScript are not specified in the function declaration.
- [C] A JavaScript variable can be used to store values of different types during the execution of a script.
- [D] When calling a function in JavaScript it is permissible to supply more arguments than those specified in the declaration of the function.

#### **Question 6**

Which of the following expressions could be used in JavaScript to determine whether an object `mike` has a property called `age`?

- [A] `age in mike`
- [B] `age in "mike"`
- [C] `"age" in "mike"`
- [D] `"age" in mike`

### **Question 7**

What is the difference between the `==` and `===` operators in JavaScript?

- [A] The `==` operator compares values whereas the `===` operators compares references.
- [B] The `===` operator compares values whereas the `==` operators compares references.
- [C] Implicit type conversions may take place when comparing items with different types using `===`, but not when using `==`.
- [D] Implicit type conversions may take place when comparing items with different types using `==`, but not when using `===`.

### **Question 8**

Which of the following JavaScript expressions evaluates to `false`?

- [A] `1 == "1.0"`
- [B] `"1" == 1.0`
- [C] `1 === 1.0`
- [D] `"1" == "1.0"`

### **Question 9**

The JQuery expression `$("[name]")` would refer to which of the following?

- [A] All elements with a `name` attribute
- [B] All elements without a `name` attribute
- [C] All elements with an `id` attribute with value `name`
- [D] All elements with any attribute with value `name`

### **Question 10**

The JQuery expression `$ ("p>b")` would refer to which of the following?

- [A] All `<b>` elements nested within `<p>` elements
- [B] All `<p>` elements nested within `<b>` elements
- [C] All `<b>` elements that are immediate children of `<p>` elements
- [D] All `<b>` elements that appear immediately after a `<p>` element

### **Question 11**

The JQuery expression `$ ("#i").remove()` will do which of the following?

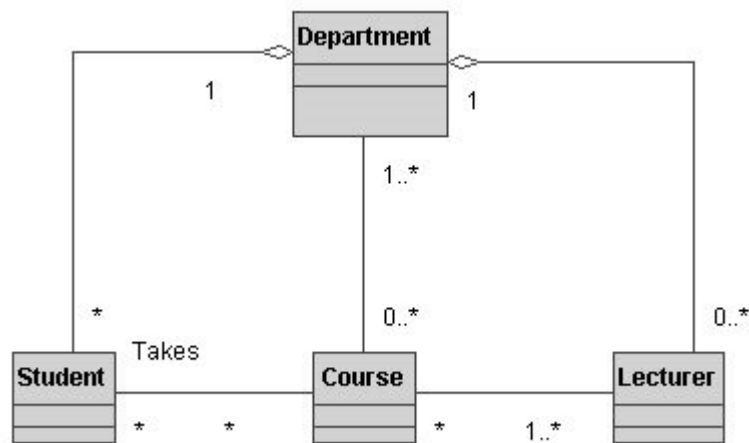
- [A] Remove all of the attributes of the elements with `id` attribute `i`.
- [B] Remove from the document the element with `id` attribute `i` and all elements within that element.
- [C] Remove from the document all elements within the element with `id` attribute `i`.
- [D] Remove the `id` attribute of the element with `id` attribute `i`.

### **Question 12**

A JSP page is translated into which of the following?

- [A] an applet
- [B] a servlet
- [C] a JavaBean
- [D] a JavaScript script

### Diagram For Questions 13 and 14



#### Question 13

In the above UML class diagram the connection between the **Department** and **Lecturer** classes shows which of the following relationships?

- [A] inheritance
- [B] composition
- [C] realisation
- [D] aggregation

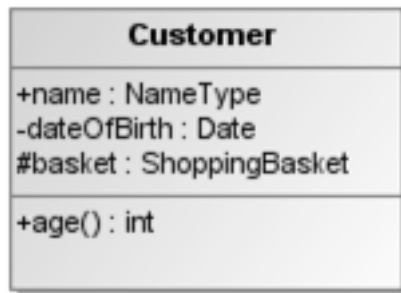
#### Question 14

Which of the following is **not** true about the system modelled by the above diagram?

- [A] A student may take several courses.
- [B] Each lecturer belongs to exactly one department.
- [C] A department with no lecturers is allowed to exist.
- [D] A course that has no lecturers is allowed to exist.

### **Question 15**

Consider the following class specification from a UML class diagram.



What is indicated by the # symbol next to the `basket` declaration?

- [A] The basket is a public attribute of the customer.
- [B] The basket is a protected attribute of the customer.
- [C] The basket is a private attribute of the customer.
- [D] The basket is an inherited attribute.

### **Question 16**

Which of the following tags could be used in a JSP file to extract all of the values submitted on a form into a Java Bean called `myBean`?

- [A] `<jsp:setProperty myBean property = "*">`
- [B] `<jsp:setProperty name="myBean" property = "*">`
- [C] `<jsp:setProperty bean="myBean" property = "all" >`
- [D] `<jsp:setProperty myBean = "all">`

### **Question 17**

Which of the following is the correct style of tag for JSP expressions?

- [A] `<%! ..... %>`
- [B] `<%= ..... =%>`
- [C] `<%= ..... %>`
- [D] `<% ..... %>`



### **Question 18**

Which of the following tags could be used in a JSP file to pass control to another JSP page (page2.jsp) and then return control to the original page?

- [A] `<jsp:include page="page2.jsp">`
- [B] `<jsp:import page="page2.jsp">`
- [C] `<jsp:insert page="page2.jsp">`
- [D] `<jsp:forward page="page2.jsp">`

### **Question 19**

A JavaBean with which of the following scopes would not survive the forwarding to the target page of a `jsp:forward` tag?

- [A] request scope
- [B] application scope
- [C] page scope
- [D] session scope

### **Question 20**

It is intended that when the submit button is clicked on the following (incomplete) HTML form a JavaScript function called `validate` should be called to validate form data and if the validation is successful the form contents should be submitted to a JSP page `login.jsp`.

```
<form method="POST" action="login.jsp">
  <p>
    Username: <input type="text" ... />
    ...
  </p>
  <input type="submit" value="Log in"
    onsubmit="validate()" />
</form>
```

There is an error that will result in the validation-and-submission sequence not working correctly. Which of the following corrections needs to be made?

- [A] The name of the `onsubmit` attribute should be changed to `onclick`.
- [B] The `onsubmit` attribute should be an attribute of the `form` element, not of the `input` element.
- [C] The name of the `action` attribute should be changed to `target`.
- [D] The value of the `method` attribute should be changed to `"GET"`.