



UNIVERSITY OF COLOMBO, SRI LANKA

FACULTY OF TECHNOLOGY

LEVEL I EXAMINATION IN TECHNOLOGY - SEMESTER II - 2020

IC 1203 – Web Application Development

Two (02) hours

Answer **all the questions** in PART A and answer **only one question** in PART B

No. of pages: 06

Important Instructions to Candidates

- If a page or part of this question paper is not printed, please inform the supervisor immediately
- Enter your index number on all pages of the answer script
- Write the answers to the questions in the space provided in the question paper.
- Electronic devices capable of storing and retrieving text, including electronic dictionaries and mobile phones are not allowed.

Index No:

PART A


Answer all the questions in PART A.

1) a) i. You are asked to design an attractive website for an archaeological department that enhances usability. Sketch the Home page you would develop, including the following requirements. Name each menu item/ image/ hyperlink/ heading/ description that you would create on your Home page and their position on the page. (10 marks)

- Display 25 heritage sites of the country – The user shall be able to view the name of each site. Optionally, an image of an appropriate size and a description can be displayed. If the user needs to read more details, hyperlinks will redirect to another page
- Past and current expeditions – Includes details of the departments past and current research activities
- A virtual tour of some selected heritage sites – The user could view 360 degrees view of the place.
- In addition to that, the Home page should display details of contact, events and latest news.

ii. Describe two factors you would consider when designing the website, if the target audience is not limited to a specific age group. (5 marks)

b) The following table depicts a chart describing the characteristics and diet habits of an Ostrich. Write a suitable HTML code to achieve the result below. (10 marks)

Ostrich Facts		
Description	Diet	Movement
<p>A large flightless bird is found only in open country in Africa.</p> <p>The largest living bird.</p> <p>An adult male is about 9 feet tall.</p>	<ul style="list-style-type: none"> • Eats mostly plants, particularly roots, seeds and leaves. • They also eat, insects and small vertebrates: locusts, lizards, snakes, and rodents 	<p>They can sprint up to 43 miles an hour and run at 31 miles an hour.</p> <p>However, it is less than the speed of a “Cheetah”. (< 70 mph)</p>
		

- 2) a) A shopping website has a feature to add items to a virtual cart. The figure below is a snapshot of its graphical interface. The partial HTML code is given to you. Write appropriate answers to implement the features mentioned in parts i, ii and iii.

<input type="checkbox"/> Potatoes	Rs.25.00 Unit Price(per 100g)	Quantity 2	Add
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<input type = "checkbox">Potatoes
Rs.<span id="unit">25.00</span>
<small>Unit Price (per 100g)</small>
Quantity <input type="number" id="qty">
<input type="button" onclick="add()" value="Add">
```

- Write a JavaScript function to the “Add” button to obtain the item’s total price of the item for any varying quantity the user enters. (6 marks)
- How would you validate whether the quantity entered is a positive number greater than zero? If a user enters an inappropriate value, the input box will be cleared, and an alert will be shown to the user. Write a suitable code to achieve this requirement to the same add() function above. (8 marks)
- If the user has entered correct values and clicks the Add button, the item’s total price should be displayed below the Add button as in the figure below. Write a suitable code to get this result. (5 marks)

<input type="checkbox"/> Potatoes	Rs.25.00 Unit Price(per 100g)	Quantity 3.5	Add
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The total price of the item is 87.5

- Suppose a password is formed by combining a username the user enters and a random number generated by the Math.random() function in JavaScript. Assume that the username should include at least five characters. (6 marks)
Example: The user enters “Thomas” as the username. A possible password generated by the system would be “hoM1257”.

If the random number is generated for you, using JavaScript built-in functions, describe how you could obtain the string part of the above password from the given username.

- 3) a) A library maintains records of its users and books. The following are the details the library stores regarding a book.

Details of a book:

- Book Title
- Author
- Category (Science, Maths, English, Geography, History)
- ISBN
- Publisher
- Status (New, Used)

- i. Create a form to add a new book to the library to obtain the above details. The details are processed in the file “handler.php”. (8 marks)
- ii. How can you capture the details entered through the form you created in part (i) in the file “handler.php”? (5 marks)

Write a query in PHP to save these details in a MySQL database table named “book”. Consider that “id” will auto increment the rows in the table. The structure of the table is provided to you.

id	title	author	category	isbn	publisher
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- iii. In a record entered into the above “book” table, the librarian has mistakenly entered the wrong publisher to the ISBN “1777996089”. Write a PHP query to update the correct value “Macmillan” if the system allows editing book details. (5 marks)
- b) What is the difference between GET and POST methods? (4 marks)
- c) What is the purpose of using session variables? (3 marks)

PART B

Answer one (01) of the two questions in PART B.

- 4) a) Identify the effects used to the following HTML elements. (10 marks)

i.



ii.

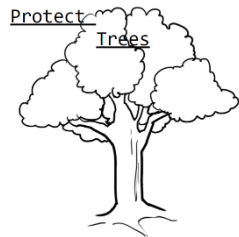


iii. **Bravo !**

- b) The list below consists of four identification numbers. The first two digits represents a person's birth year starting from 1900 to 1999. Write a PHP code to get the birth year from the list below and display them in a separate list. (You may use the default list style) (15 marks)

- ✓ 78/AVP/F/500
- ✓ 55/AVP/M/610
- ✓ 87/AVP/M/540
- ✓ 91/AVP/F/722

- 5) a) The following figure is a segment extracted from a web page. The tree image and the text "Protect Trees" are placed at the top left corner of the web page. The image and paragraph tag display the tree.jpg image and the "Protect Trees" text respectively.



- i. Write appropriate CSS styles that could be applied to the image tag selector. (8 marks)

- ii. What additional HTML tags could be used to display the text as in the figure? Write the HTML code for the text formatting only. (3 marks)

b) Write JavaScript code to display the patterns below.

i. * (4 marks)

ii. ^^^^^ (4 marks)
^^^^
^^^
^^
^

c) Suppose a user needs to filter matching words while typing in a search bar without reloading the page. Describe a mechanism in web development to implement this feature. (6 marks)

***** End of the Paper *****