



# THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

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**MAIN EXAMINATION**

**JANUARY – APRIL 2022**

**FACULTY OF SCIENCE**

**DEPARTMENT OF COMPUTER SCIENCE**

**REGULAR PROGRAMME**

**CMT 209/LIS 304: WEB DEVELOPMENT/WEB AUTHORIZING AND MANAGEMENT**

**Date: APRIL 2022**

**Duration: 2 Hours**

**INSTRUCTIONS: Answer Question ONE and any TWO Questions**

Q1.

a) Compare GET and POST in terms of method of sending information, usage, and limitations. Give a simple example in both cases. **(4 Marks)**

b) What is the value of "\$day" in the below code? **(2 Marks)**

```
$wed= 1;
```

```
$day = ($wed==1) ? 'today' : 'tomorrow';
```

Explain your answer.

c) Explain the purpose of the php.ini file. **(2 Marks)**

d) Differentiate between **echo()** and **print()** functions as used in PHP. **(2 Marks)**

e) Write a PHP script that estimates the value of the value of  $e^x$  by using the formula below:

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots$$

**Note:** Allow the user to enter the number of terms to calculate (In the formula above, the calculated terms are 3). **(7 Marks)**

f) The HTML form below was developed by an upcoming web developer

```

<form name="foodform" method="POST" action="vyakula.php">
  <table border="1">
    <tr>
      <th scope="row"><div align="right">Name</div></th>
      <td><label>
        <input name="name" type="text" id="name">
      </label></td>
    </tr>

    <tr>
      <th scope="row"><div align="right">Gender</div></th>
      <td><label>
        <input name="gender" type="radio" value="male"> Male
        <input name="gender" type="radio" value="female">
        Female
      </label></td>
    </tr>

    <tr>
      <th scope="row"><div align="right">Favorite Foods
      </div></th>
      <td><label>
        <input name="foods[]" type="checkbox" value="Ugali">
        Ugali & Sagaa<br>
        <input name="foods[]" type="checkbox"
        value="Githeri">
        Githeri & Avocado <br>
        <input name="foods[]" type="checkbox"
        value="Chapati">
        Chapati & Mandondo </label></td>
    </tr>

    <tr>
      <th scope="row">&nbsp;</th>
      <td><label>
        <input type="submit" name="Submit" value="Submit">
      </label></td>
    </tr>
  </table>
</form>

```

**Required:** Write the implementation of **vyakula.php** that will print out all the values that the user entered through the above form. (7 Marks)

g) What do we mean by object inheritance as used in object-oriented PHP? What is its significance? Illustrate using code snippet how you would implement object inheritance. **(6 Marks)**

Q2.

a) By use of examples, differentiate server-side scripting from client-side scripting. **(4 Marks)**

b) Discuss the similarities and differences between sessions and cookies as used in web development. **(4 Marks)**

c) Implement a calculator to convert land sizes between acres and hectares (both ways). One hectare is equivalent to 2.471 acres. Your user interface (*acreage.html*) should have one text-input, two radio-buttons, submit and reset -buttons. Values are posted to PHP-script (*acreage.php*) which calculates the conversions according the user input. **(7 Marks)**

Q3.

a) By means of valid PHP codes, show TWO methods you can use to include the contents of a PHP file into another PHP file. **(2 Marks)**

b) Explain the differences between the two methods in Question(3)(a) above **(2 Marks)**

c) Explain any THREE *differences* between **variables** and **constants** in PHP. **(3 Marks)**

d) Consider the color array below

```
$color = array('white', 'green', 'red')
```

Required: Write a PHP script that will display the colors in:

- i. Ascending order (based on the first character of the colour name). **(4 Marks)**
- ii. descending order (based on the first character of the colour name). **(4 Marks)**

e) b

Q4.

a) By means of valid PHP codes, demonstrate the difference the **break** and **continue** statements. **(4 Marks)**

b) Discuss the difference between `include_once()` and `require_once()` **(2 Marks)**

c) Explain which one between the `include_once()` and `require_once()` functions would you use in circumstances where you need to connect to a database? Explain why. **(2 Marks)**

d) When a user connects to a search engine on the web, and fills in a search query, the string sent to the search engine might be: `http://www.euroseek.net?query=tropical+flowers&lang=en`

**Required:** Write the HTML/PHP code that caused this string to be sent. **(3 Marks)**

e) By means of PHP codes, show the difference between `for` and `foreach` loop. **(4 Marks)**

Q5.

Write PHP code to create a class called `Item`.

a) The class has 3 attributes: **id**, **name** and **price** and 3 methods: `getId()` that returns the id of the item, `getName()` that returns the name of the item and `getPrice()` that returns the price of the item. Ensure to include a constructor for the class that initializes the 3 attributes. **(10 Marks)**

b) Write code to instantiate the `Item` class defined in Question (5)(a) above. **(2 Marks)**

c) Write code to call the methods defined for the `Item` class. **(3 Marks)**

**\*END\***