Republic of Rwanda
City of Kigali

GASABO DISTRICT

DISTRICT COMPREHENSIVE ASSESSMENT, RTQF LEVEL… 2023-2024

SECTOR: ICT & MULTIMEDIA

TRADE: SOFTWARE DEVELOPMENT

MODULE CODE: SWDPP401

MODULE NAME: PHP PROGRAMMING

DATE OF EXAM: 14/3/2024

DURATION: 3HOURS

SCHOOL YEAR: 2023-2024

TERM: 2

Instructions:

1. **Attempt all questions in section A** **(55 Marks)**
2. **Attempt three questions in section B** **(30 Marks)**
3. **Attempt one question in section C** **(15 Marks)**

SECTION A: Mandatory

MUTLIPLE CHOICE /20MARKS

1. What does PHP stand for? **/1Marks**
   - **a)** Personal Home Page
   - **b)** Preprocessed Hypertext
   - **c)** Hypertext Preprocessor
   - **d)** Programmed HTML

Answer: c) Hypertext Preprocessor

2. Which of the following accurately describes the role of an interpreter? **/1Marks**
   - **a)** Compiles code into machine language before execution
   - **b)** Translates code line by line and executes it directly
   - **c)** Converts code into bytecode for execution
   - **d)** Optimizes code for faster execution

Answer: b) Translates code line by line and executes it directly

3. What does "open source" mean in the context of software development? **/1Marks**
   - **a)** Software that is free to download
   - **b)** Software that can only be viewed but not modified
   - **c)** Software that is released with a license allowing viewing, modification, and distribution of its source code
   - **d)** Software that is developed by a single company

Answer: c) Software that is released with a license allowing viewing, modification, and distribution of its source code

4. Which of the following is a fundamental component of a web server? **/1Marks**
   - **a)** Database
   - **b)** Interpreter
   - **c)** Apache
   - **d)** Browser

Answer: c) Apache

5. MySQL is an example of which type of database management system? **/1Marks**

   a) Relational DBMS

   b) NoSQL DBMS

   c) NewSQL DBMS

   d) Hierarchical DBMS

Answer: a) Relational DBMS

6. Which characteristic of PHP allows it to generate dynamic web pages? **/1Marks**
    - **a)** Cross-Platform Compatibility
    - **b)** Server-Side Scripting
    - **c)** Simple and Easy to Learn
    - **d)** Strong Community

Answer: b) Server-Side Scripting

7. Which of the following is NOT a popular IDE or text editor for programming? **/1Marks**

    a) Visual Studio Code

    b) Eclipse

    c) Apache

    d) Sublime Text

Answer: c) Apache

8. What is the purpose of XAMPP in web development? **/1Marks**

    a) Managing databases

    b) Testing websites locally

    c) Creating dynamic web pages

    d) Writing server-side scripts

Answer: b) Testing websites locally

9. Which stack is specifically designed for macOS users in web development? **/1Marks**
    - **a)** WAMP
    - **b)** LAMP
    - **c)** XAMPP
    - **d)** MAMP

Answer: d) MAMP

10. What is the primary function of a web browser? **/1Marks**
    - **a)** Process server-side scripts
    - **b)** Compile HTML files
    - **c)** Interact with information on the World Wide Web
    - **d)** Manage databases

Answer: c) Interact with information on the World Wide Web

11. Which PHP file extension indicates that the file contains PHP code? **/1Marks**

a) A) .html
b) B) .js
c) C) .css
d) D) .php

Answer: D) .php

12. What is the purpose of the "date" function in PHP? **/1Marks**
    a) A) To format and display dates and times
    b) B) To create new date objects
    c) C) To retrieve the current timestamp
    d) D) To calculate time differences

Answer: A) To format and display dates and times

13. How can you concatenate strings in PHP using the dot operator? **/1Marks**
    a) A) By using the + operator
    b) B) By using the & operator
    c) C) By using the . operator
    d) D) By using the ~ operator

Answer: C) By using the . operator

14. Which operator in PHP is used as an alternative method of implementing if-else or nested if-else statements? **/1Marks**

    a) Greater than operator (>)

    b) Less than operator (<)

    c) Ternary operator (? :)

    d) Equal to operator (==)

Correct Answer: c) Ternary operator (? :)

15. What type of array in PHP uses named keys (strings) instead of numeric indices to access elements? **/1Marks**

    a) Indexed array

    b) Multidimensional array

    c) Associative array

    d) Double array

Correct Answer: c) Associative array

16. Which loop in PHP guarantees that the code block is executed at least once, as the condition is checked after the code is executed? **/1Marks**

    a) for loop

b) while loop

c) do-while loop

d) foreach loop

Correct Answer: c) do-while loop

17. Which keyword is used to exit the switch block when a matching case is found in PHP? **/1Marks**

    a) return

    b) break

    c) continue

    d) exit

Correct Answer: b) break

18. What does the $_FILES variable contain in PHP? **/1Marks**

    a) Uploaded files using HTTP POST method

    b) Server information

    c) Form data submitted using method="post"

    d) Global variables

Correct Answer: a) Uploaded files using HTTP POST method

19. What PHP function is used to delete a file? **/1Marks**

    a) file_remove()

    b) file_delete()

    c) file_unlink()

    d) unlink()

Correct Answer: d) unlink()

20. Which PHP function is used to read the entire contents of a file into a string? **/1Marks**

    a) fread()

    b) fgets()

    c) file_get_contents()

    d) readfile()

Correct Answer: c) file_get_contents()

OPEN QUESTIONS /35Marks

1. Explain the `if` statement in PHP with an example. **/3Marks**

   Answer: The `if` statement executes a block of code if a specified condition is true. Example:

```
$x = 10;
if ($x > 5) {
    echo "x is greater than 5";
}
```

2. Differentiate between `if-else` and `if-elseif-else` statements in PHP. **/3Marks**

Answer: The `if-else` statement executes one block of code if a condition is true and another block if the condition is false. The `if-elseif-else` statement tests multiple conditions sequentially.

3. Explain indexed arrays in PHP with an example. **/3Marks**

Answer: Indexed arrays are arrays where each element is assigned a numeric index, starting from 0 and increasing sequentially. Example:

```
$colors = array("red", "green", "blue");
// or using short syntax
$colors = ["red", "green", "blue"];
```

4. What built-in functions does PHP provide for working with arrays? **/4Marks**

   Answer: PHP provides numerous built-in functions for working with arrays, such as `count()`, `array_push()`, `array_pop()`, `array_merge()`, etc.

5. Explain the `for` loop in PHP with its syntax. **/5Marks**

Answer: The `for` loop is used when you know in advance how many times you want to repeat a block of code. Syntax:

```
for ($i = 0; $i < 5; $i++) {
    // Code to be repeated goes here
    echo $i;
}
```

6. What is the purpose of the `foreach` loop in PHP? **/3Marks**

   Answer: The `foreach` loop is used to iterate over elements in an array or objects in a collection.

7. Differentiate between the `while` and `do-while` loops in PHP. **/3Marks**

Answer: The `while` loop repeats a block of code as long as a condition is true, while the `do-while` loop guarantees that the code block is executed at least once, as the condition is checked after the code is executed.

8. Explain how to define a user-defined function in PHP and give syntax. **/4Marks**

Answer: A user-defined function in PHP starts with the `function` keyword followed by the function name, parameters (if any), and a block of code enclosed within curly braces.

Syntax:

```
function functionName($param1, $param2) {
    // Function code
}
```

9. Explain the process of opening a file in PHP. **/2Marks**

Answer: In PHP, you can open a file or URL using the `fopen()` function.

10. **How do you define a class in PHP? /2Marks**

Answer: You define a class in PHP using the `class` keyword.

11. What are access modifiers in PHP, and how do they affect class members? **/3Marks**

Answer: There are three access modifiers in PHP: `public`, `protected`, and `private`.

SECTION B (Chose three questions only 10Marks each) /30MARKS

1. How can you perform form (name and email) validation in PHP, provide a basic structure for the PHP script?

Answer: Form validation in PHP involves checking user input for errors. Here's a basic structure for the PHP script:

```
<?php
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $name = $_POST["name"];
    $email = $_POST["email"];

    // Perform validation
    $errors = array();

    // Validate the name
    if (empty($name)) {
        $errors[] = "Name is required.";
    }
```

```
    // Validate the email
    if (empty($email)) {
        $errors[] = "Email is required.";
    } elseif (!filter_var($email, FILTER_VALIDATE_EMAIL)) {
        $errors[] = "Invalid email format.";
    }

}?>
```

2. Using the `switch` statement, write a php program do display a day from the days of week.

   Answer:

```
$day = "Monday";
switch ($day) {
    case "Monday":
        echo "It's Monday!";
        break;
    case "Tuesday":
        echo "It's Tuesday!";
        break;
   case "Wednesday":
        echo "It's Wednesday!";
        break;
   case "Thursday":
        echo "It's Thursday!";
        break;
   case "Friday":
        echo "It's Friday!";
        break;
   case "Saturday":
        echo "It's Saturday!";
        break;

    default:
        echo "It's Sunday.";
}
```

3. Create an array which will store multiple colors and display them using foreach.

   Answer:

```
$colors = array("red", "green", "blue", "yellow", "Magenta");
foreach ($colors as $color) {
    // Code to be repeated goes here
    echo $color;
}
```

4. Provide examples of three super global variables in PHP and explain their usage.

Answer:

i. `$GLOBALS`: Used to access global variables from anywhere in the PHP script.
ii. `$_SERVER`: Holds information about headers, paths, and script locations.
iii. `$_REQUEST`: Used to collect data after submitting an HTML form.

5. During the connection of php to database, we use different functions, give any four among them.

Answer: mysqli_query(), mysqli_num_rows(), mysqli_fetch_assoc(), mysqli_connect_error(), mysqli_connect(), mysqli_close(), mysqli_select_db().

SECTION C: MANDATORY /15MARKS

1. a) After successful creating connection to the server where we have a database called **school,** using mysqli procedural, write php code to create a table called **student** with the following attributes:
   id INT(6) AUTO_INCREMENT PRIMARY KEY, firstname VARCHAR(40) NOT NULL, lastname VARCHAR(40) NOT NULL, class VARCHAR(10)). **/6Marks**
   b) Write php code to insert record in the student table created in question a). **/3Marks**
   c) Write php code to display information from student table. **/3Marks**
   d) Write php code to update information in the table student. **/3Marks**

Answer:

a) <?php

```
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "school";
// Create connection
$conn = mysqli_connect($servername, $username, $password, $dbname);
// Check connection
if (!$conn) {
  die("Connection failed: " . mysqli_connect_error());
}
// sql to create table
$sql = "CREATE TABLE student (
id INT(6)  AUTO_INCREMENT PRIMARY KEY,
firstname VARCHAR(40) NOT NULL,
lastname VARCHAR(40) NOT NULL,
class VARCHAR(10)
```

```
)";
if (mysqli_query($conn, $sql)) {
  echo "Table student created successfully";
} else {
  echo "Error creating table: ". mysqli_error($conn);
}
mysqli_close($conn);
?>
```

b)

```
<?php
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "school";
// Create connection
$conn = mysqli_connect($servername, $username, $password, $dbname);
// Check connection
if (!$conn) {
  die("Connection failed: " . mysqli_connect_error());
}
$sql = "INSERT INTO student (firstname, lastname, class)
VALUES ('mukeshimana', 'Anne', 'L4SWD')";
if (mysqli_query($conn, $sql)) {
  echo "New record created successfully";
} else {
  echo "Error: " . $sql . "<br>" . mysqli_error($conn);
}
mysqli_close($conn);
?>
```

c) <?php

```
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "school";
// Create connection
$conn = mysqli_connect($servername, $username, $password, $dbname);
// Check connection
if (!$conn) {
  die("Connection failed: " . mysqli_connect_error());
}
$sql = "SELECT id, firstname, lastname FROM student";
$result = mysqli_query($conn, $sql);
if (mysqli_num_rows($result) > 0) {
  // output data of each row
  while($row = mysqli_fetch_assoc($result)) {
    echo "id: " . $row["id"]. " - Name: " . $row["firstname"]. " " . $row["lastname"]. "<br>";
  }
} else {
  echo "0 results";
}
mysqli_close($conn);
?>
```

d) <?php

```
$servername = "localhost";
$username = "root";
$password = " ";
$dbname = "school";

// Create connection
$conn = mysqli_connect($servername, $username, $password, $dbname);
// Check connection
```

```php
if (!$conn) {
  die("Connection failed: " . mysqli_connect_error());
}

$sql = "UPDATE student SET firstname=’Manzi’, lastname='Dany' WHERE id=2";

if (mysqli_query($conn, $sql)) {
  echo "Record updated successfully";
} else {
  echo "Error updating record: " . mysqli_error($conn);
}

mysqli_close($conn);
?>
```