



## UNIVERSITY OF GHANA

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### B.SC INFORMATION TECHNOLOGY, SECOND SEMESTER EXAMINATIONS: 2015/2016

### CSIT206: APPLY IT PROGRAMMING (3 CREDITS)

#### INSTRUCTION:

*Answer all Questions in Section A*

*Answer Question ONE and any other TWO (2) in Section B*

#### TIME ALLOWED:

*TWO AND A HALF (2½) HOURS*

#### Section A

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1. Use an HTML form's \_\_\_\_\_ attribute to indicate to what PHP script the form data should be submitted.  
A. method                      B. post                      C. action                      D. get
2. The HTML form's method attribute dictates \_\_\_\_\_.  
A. to what script the form data is submitted                      B. how the form data should be submitted  
C. the form's name                      D. how long the form can be
3. What is the correct syntax for declaring and initializing an associative array?  
A. \$AutoMakers = array("Ford" . "Mustang", "Chevrolet" . "Corvette");  
B. \$AutoMakers = array("Ford"= "Mustang", "Chevrolet" = "Corvette");  
C. \$AutoMakers = array("Ford"> "Mustang", "Chevrolet" > "Corvette");  
D. \$AutoMakers = array("Ford"=> "Mustang", "Chevrolet"=> "Corvette");
4. In order to execute a PHP script, you must have a \_\_\_\_\_.  
A. Web browser                      B. Web server  
C. Text editor                      D. PHP-enabled Web server

5. Which of the following syntax will cause an error?  
A. echo "She said, "How are you?";  
B. echo "She said, "How are you?"";  
C. echo "She said, \"How are you?\"";  
D. None of them
6. If the *require()* function cannot include the file, it will \_\_\_\_\_.  
A. do nothing  
B. generate an error and terminate the script  
C. generate an error  
D. generate a warning
7. Which of the following functions can be used to send data to the Web browser?  
I. echo()  
II. print()  
III. echo() and print()  
IV. None of these  
A. III \_\_\_\_\_ B. I C. IV D. II
8. What operator is used to concatenation string in PHP?  
A. = B. .= C. . D. +
9. To test if an HTML form that uses the POST method has been submitted, you can check if \_\_\_\_\_ equals POST.  
A. \$\_POST['REQUEST\_METHOD'] B. \$ \_SERVER['REQUEST\_METHOD']  
C. \$\_POST['ACTION\_METHOD'] D. \$\_FORM['REQUEST\_METHOD']
10. To have a function return a value, use the \_\_\_\_\_ keyword.  
A. set B. assign C. return D. return\_value
11. A variable defined within a function, including a function's arguments, is said to have \_\_\_\_\_ scope.  
A. global B. local C. file D. block
12. A two letter abbreviation would be best stored in a column of type \_\_\_\_\_.  
A. VARCHAR(2) B. CHAR(2) C. VARCHAR D. CHAR
13. The asterisk in the query *SELECT \* FROM tablename* means \_\_\_\_\_.  
A. the primary key column B. every non-null column  
C. every column D. the previously requested columns
14. The two most commonly used storage engines in MySQL are \_\_\_\_\_.  
A. InnoDB and MyISAM B. MyISAM and MySQL  
C. HEAP and InnoDB D. InnoDB and UTF8
15. If a URL is *page.php?id=1*, then the \_\_\_\_\_ variable has a value of 1.

- A. \$\_POST['id']      B. \$ \_GET['id']      C. \$\_URL['id']      D. None of these
16. \_\_\_\_\_ errors will not be reported by PHP.  
A. Syntactical      B. Run-time      C. Logical      D. None of these
17. In order to allow for uploaded files, the HTML form must use the enctype attribute with a value of \_\_\_\_\_.  
A. multipart      B. multipart/form-data  
C. form-data      D. form-data/multipart
18. What PHP function is used to send a cookie to the Web browser?  
A. send\_cookie()      B. set\_cookie()      C. setcookie()      D. sendcookie()
19. A prepared statement of *mysqli* API is not vulnerable to SQL injection attacks.  
**True or False?**
20. XML stands for \_\_\_\_\_.  
A. Extended Mashup Language      B. Extensible Mashup Language  
C. Extensible Markup Language      D. None of these
21. Which of the following is not a function of XML?  
A. exchanging data      B. modelling data  
C. styling data      D. storing data
22. The jQuery library is added to an HTML page via the \_\_\_\_\_ tag.  
A. jQuery      B. javascript      C. script      D. framework
23. What jQuery method is used to perform an Ajax request?  
A. ajax()      B. ajaxRequest()      C. send()      D. None of them
24. A constructor is a \_\_\_\_\_.  
A. a special attribute      B. a method called when a new object is created  
C. the name of a class      D. another word for “method”
25. The syntax \_\_\_\_\_ is how you would call a *method()* using an object *\$obj*.  
A. \$obj.method();      B. \$obj->method();  
C. \$obj->method      D. \$obj.method
26. Which of the following is a valid PHP variable name?  
A. SalesOrder      B. salesOrder      C. \$SalesOrder      D. \$1SalesOrder

27. Which of the following is the correct string for a filter that narrows a query result to include only records in which the City field is equal to Accra?

A. WHERE City = 'Accra'

B. City = 'Accra'

C. WHERE 'City' = Accra

D. 'City' = 'Accra'

28. Which is the correct syntax for declaring a variable and assigning it a string?

A. \$myVariable = "Hello";

B. \$my Variable = "Hello"

C. "Hello" = \$myVariable;

D. \$myVariable = Hello;

29. How would you call the **mymethod** method of a class within the class itself?

A. \$self=>mymethod();

B. \$this->mymethod();

C. \$current->mymethod();

D. \$this::mymethod();

30. Which of the following character pairs match characters at the beginning and end of a string in a regular expression?

A. \\* and \*\

B. || and ||

C. ^ and \$

D. # and #

31. Stored information about a previous visit to a Web site is called information.

A. HTTP

B. client-side

C. state

D. prior

32. What is the difference between print() and echo()?

A. echo() has return value, while print has no return value

B. echo() can be used as part of an expression, while print() can't

C. echo() can be used in the CLI version of PHP, while print() can't

D. print() can be used in the CLI version of PHP, while echo() can't

33. How can the *index.php* script access the email form element of the following HTML form?

<form action="index.php" method="post">

<input type="text" name="email"/>

</form>

A. \$\_GET['email']

B. \$\_POST['email']

C. \$\_GET['text']

E. \$\_POST['text']

34. The availability of a cookie to other Web pages on a server is determined by the argument \_\_\_\_\_ of the setcookie() function.

A. path

B. directory

C. system

D. server

35. Array values are keyed by \_\_\_\_\_ values (called indexed arrays) or using \_\_\_\_\_ values

(called associative arrays). Of course, these key methods can be combined as well.

- A. Float, String
- B. Positive number, Negative number
- C. Even number, String
- D. Integer, String

36. How would you store an array in a cookie?

- A. By adding two square brackets ([]) to the name of the cookie
- B. By using the implode function
- C. It is not possible to store an array in a cookie due to storage limitations
- D. By using the serialize function

37. Has become the standard data manipulation language among many database management systems.

- A. Java
- B. SQL
- C. ASP.NET
- D. PHP

38. Which of the following locates a key named "Ford" in an array named \$AutoMakers[]?

- A. array\_key\_exists(\$AutoMakers => "Ford");
- B. \$AutoMakers = array\_key\_exists("Ford");
- C. array\_key\_exists(\$AutoMakers, "Ford");
- D. array\_key\_exists("Ford", \$AutoMakers);

39. Which of the following functions returns the length of a string?

- A. strlen()
- B. strspn()
- C. substr\_count()
- D. strcspn()

40. Which of the following operators is used in member selection notation?

- A. >
- B. ->
- C. =>
- D. .

## SECTION B – 60 MARKS

Attempt **QUESTION 1 (COMPULSORY)** and any other **TWO** questions in this Section  
All questions carry equal marks. Write your answers in the answer booklet provided.

- Q.1** (a) (i) Cite three (3) characteristics of a ‘*well-formed*’ XML document? (3 marks)  
(ii) AJAX stands for... (1 marks)  
(iii) Cite two things that both XML and JSON can be used for. (2 marks)

Use the relation below to answer (b) and(c).

student_name	course_code	grade
James	CSIT206	A+
Kate	CSIT206	A
Frank	CSIT206	A+
Mark	CSIT206	B+

- (b)(i) Model a ‘*well-formed*’ XML database for the data in the table. (5 marks)  
(ii) Write XPath query to retrieve all students with grade A+ from (b)(i). (2 marks)  
(c) (i) Model the data in the table as JSON data object and assign it to a variable ***data***. (5 marks)  
(ii) Write a statement to retrieve the grade of Kate from (c)(i). (2 marks)

- Q.2** (a) With the help of a diagram, illustrate how Three-Tier Web application architecture operates. (7 marks)  
(b) Consider a server with the following settings:  
    hostname: myserver.com  
    database name: monthsDB  
    username: root  
    password: csit206  
i. Use *mysqli* extension (its object interface), write PHP statement(s)

to create a connection string to connect to this database. (3 marks)

- ii. Write PHP statements necessary to insert a record into a database table called *monthsTable* having attributes *month\_name* and *number\_of\_days* (4 marks)

(c) Consider the following PHP codes. What will be the output after running this code? Explain your answer.

```
<?php
    function swap($x, $y) {
        $x = $x + 1;
        $y = $y + 2;
        return $x * $y;
    }
    $a = 2;
    $b = swap($a, $a);
    print "$a, $b";
?>
```

(6 marks)

**Q.3** (a) (i) Give the two PHP variables used to retrieve information from Web Forms. (1 marks)

(ii) Compare and contrast the two variables. (3 marks)

(b) Create a PHP class **Grade** with two methods **set\_grade(\$grade)** and **get\_grade()**. Do **NOT** use *echo* or any *print* statements in **get\_grade()** method. Then write one instance of class **Grade** and assign a grade and retrieve a grade. (10 marks)

(c) Consider the following hyperlink:

```
<a href="welcome2.php?dbase=MySQL&script=PHP">
    CSIT206: Apply IT Programming!
</a>
```

Write down PHP snippet codes that will retrieve and write the values of the query string parameters in a Web Page. (6 marks)

**Q.4** (a) Write a PHP script that will count the number of even elements in an array. Provide an example of your function being used to count even

elements in an array of your design. (5 marks)

(b) List the 3 components of an MVC framework, and explain each of their functions, with the use of a diagram. (7 marks)

(c) Explain the difference between \$message and \$\$message, using an example. (2 marks)

(c) There is the following HTML form in *index.php*

```
<form action="welcome.php" method="post">  
    Name: <input type="text" name="name"><br>  
    E-mail: <input type="text" name="email"><br>  
    <input type="submit">  
</form>
```

submitting the fields to an external PHP file *welcome.php*.

Write the code for *welcome.php*, making use a function you are to design, which ensures that both **email** and **name** are non-empty. Return **TRUE** from this function if both **name** and **email** are filled, and **FALSE** if either of them are not.

Use this function, and print “Form error” if the validation fails, and “Success” if it is successful. (6 marks)

**Q.5** (a) (i) What PHP operator would you use to check for equivalence of both the value and the type of two elements? (2 marks)

(ii) What PHP operator would you use to return the remainder of one number divided by another? e.g. 5 <operator> 3 == 2 (2 marks)

(b) Cite three PHP **superglobals**, and explain their uses. (6 marks)

(c) Rewrite the following code with **NO** errors.

```
class Vegetable {  
    var $edible;
```



```
var $number_of_pieces;

function __construct($edible == true){
    $this->edible = $edible;
}

function is_edible(){
    if ($this->edible === true){
        return 'This vegetable is edible';
    }
    else{
        return 'This vegetable is not edible';
    }
}

function slice(){
    $this->number_of_pieces++;
}

}

$yam = Vegetable(true);
print($yam.edible)
```

**(10 marks)**

***End of Questions***  
***All the best***