Department: Information Technology
Course Name: Internet Technology
Course Code: IT223
Instructor(s): Dr. Mohamed Hamed
Dr. Nour Eldeen Mahmoud

Date: 12-01-2018
Duration: 2 hours
Total Marks: 60

Answer all the Following Questions   (60 Marks)
PART I   [30 Marks]

Question 1: Complete the following   [22 Marks]

(hard drive - Domain names - Notifications - segment - process to process - connection - protocol - HTTP - header - HTTP daemon - host computer - path - ecosystem - Collect - Analyze - Act - devices - the Cloud - Telemetry - Interoperability - internet - agents - file - alias - SMTP - DNS - mapping - client - gateways - web - Communicate - Mobility - TCP - UDP - application - Scalability - cachable - domain name - different - server - HTTP requests - port - body - domain)

1.1   Mailbox is part of a local ...., a special ....
      with permission restrictions.

1.2   Mailing List is an ....to represent several ....
      e-mail addresses.

1.3   To send mail, a system must have the .... MTA, and to receive mail, a system
      must have a .... MTA

1.4   The formal protocol that defines the MTA client and server in the Internet is called
      ....

1.5   The actual mail transfer is done through message transfer ....

1.6   The .... is a directory lookup service .

1.7   DNS creates a .... between the numeric IP addresses and the human-
      readable domain names.

1.8   .... is a stream-oriented protocol.

1.9   Remote DNS data is locally .... to improve performance.

1.10 DNS protocols can use either .... or TCP.

1.11 A .... is a subtree of the domain name space   identified by a
      ....

1.12 .... are used to identify one or more IP addresses.

Cairo University
Faculty of Computers and Information
Final Exam

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[30 Marks]

PART I

[22 Marks]

Question 1: Complete the following

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1.13 A packet in TCP is called a ....

1.14 TCP provides .... communication using .... numbers.

1.15 TCP is a .... oriented protocol

1.16 A .... is the set of rules governing a conversation between people.

1.17 .... is the language that .... clients and web servers use to talk to each other

1.18 Each message, whether a request or a response in HTTP, has three parts: The request or the response line, A .... section and The .... of the message

1.19 The Web client and the Web server are .... programs

1.20 .... is a program that is designed to wait for ....

1.21 The URL defines four things: protocol, ..., port, and ....

1.22 Internet of Things is an .... of connected physical objects that are accessible through the ....

1.23 The IoT Lifecycle is ...., ..., ... and ....

1.24 IoT world is all about communication between ...., ..., and ....

1.25 .... are the flow of Information in one direction from other systems to a device

1.26 .... Data flows in one direction from the device to other systems

1.27 IoT Challenges are ...., ... and ....

Question 2 [8 Marks]

2.1 Answer the following given the following Information (6 Marks)

1) http://portquiz.net:8080/EXAM   2) Mail server IP: 195.214.145.233

3) Webserver IP: 195.65.159.58   4) http://www.portquiz.net/

5) Name server IP: 195.231.222.11

2.1.1 What is the used port in URL number (4)?...

2.1.2 What is the type of DSN record used to identify URL number (1)?.............................

2.1.3 What is the IP address assigned to MX record?...

2.1.4 What is the IP address assigned to NS record?...

2.1.5 What is the type of DSN record used to maps one domain name to another?.............

2.1.6 What is the IP address assigned to A record?...

4.1.2 According to your study in this course, how do they protect themselves against similar data breach in the future, what are php functions they should use?

4.2 A database with one table inside it with name *book,* which contains 3 fields (**id** as integer, **name** as varchar(100), **tele** as varchar(12)). Suppose that you have a file *dbConnection.php* which include one class *dbConnection* and two functions *dbConnect()* and *dbDisconnect(),* this class is used to connect with database and disconnect from it.

Write a php script which describe the *phoneBookClass* class and inherent from *dbConnection* class, you need to write 2 functions inside this class, function *searchByName($name)* which select data from table *book* with *Name* contains the *$name* and return **2D array** with the selected data and a function *updateRecord($id,$name,$tele)* which update a record in the table for a certain *id* and return *a Boolean variable* if the record was updated or not. **Be concise and clear.**   (3 marks)

Best wishes
Dr. Mohamed Hamed
Dr. Nour Eldeen Mahmoud

4.1.3

```php
<?php
for ($x = 0; $x <= 10; ++$x)
    echo ++$x." ";
?>
```

(9 marks)

4.2: Write the following scripts that produce the following outputs?
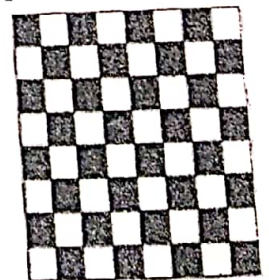
4.2.1 Use HTML to generate the following output

First name:
Ahmed
Last name:
Ali
Gender:
⦿ male ○ female

Faculty FCI ▼
FCI
Submit ENG

4.2.2 Use php and CSS script to generate the following output. Table width="270px" and take 30px as cell height and width.

1. A packet in TCP is called a ....
11. TCP provides .... communication using .... numbers.
12. TCP is a .... oriented protocol
16. A .... is the set of rules governing a conversation between people.
17. .... is the language that .... clients and web servers use to talk to each other
18. Each message, whether a request or a response in HTTP, has three parts: The request or the response line, A .... section and The .... of the message
19. The Web client and the Web server are .... programs
20. .... is a program that is designed to wait for ....
21. The URL defines four things: protocol, ..., port, and ....
22. Internet of Things is an .... of connected physical objects that are accessible through the ....
23. The IoT Lifecycle is ...., ..., ... and ....
24. IoT world is all about communication between ...., ..., and ....
25. .... are the flow of Information in one direction from other systems to a device
26. .... Data flows in one direction from the device to other systems
27. IoT Challenges are ...., ... and ....

[8 Marks]

Question 2   (6 Marks)

1.1 Answer the following given the following Information

1) http://portquiz.net:8080/EXAM   2) Mail server IP: 195.214.145.233
3) Webserver IP: 195.65.159.58   4) http://www.portquiz.net/
5) Name server IP: 195.231.222.11

1.1.1 What is the used port in URL number (4)?...
1.1.2 What is the type of DSN record used to identify URL number (1)?.......................................
1.1.3 What is the IP address assigned to MX record?...
1.1.4 What is the IP address assigned to NS record?...
1.1.5 What is the type of DSN record used to maps one domain name to another?.........................
1.1.6 What is the IP address assigned to A record?...

13. Name Sever is responsible for answering ....

14. An .... record defines the authoritative Name servers for the domain

15. The .... record defines a host contains an IPv4 Address

16. An .... record defines the mail servers for a particular domain

17. DNS .... entries remain active for a predetermined time before being deleted.

18. The .... enables dynamic allocation of IP addresses to hosts.

19. DHCP also can assign .... IP addresses to some systems

20. The information contained in the WWW takes the form of ....

21. HTTP uses the services of .... on well-known port ....

22. HTTP .... is a program that is designed to wait for .... requests and handle them when they arrive.

23. HTTP is a .... protocol, because an HTTP server maintains no .... about the clients

24. .... virtual point-to-point connection made through a public network.

25. A .... attack occurs when multiple systems flood the bandwidth or resources of a targeted system

PART II   [30 Marks]
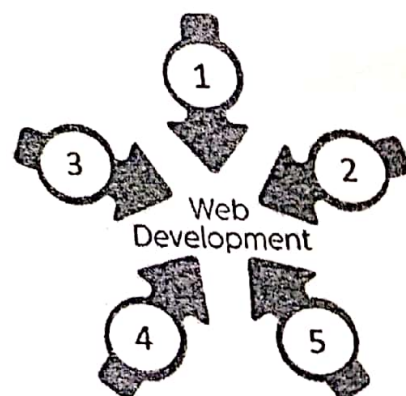### Question 2   [12 Marks]

2.1 Fill the circle number with appropriate technology term (No Abbreviations)   (3 marks)

2.1.1 Circle Number 1: ....

2.1.2 Circle Number 2: ....

2.1.3 Circle Number 3: ....

2.1.4 Circle Number 4: ....

2.1.5 Circle Number 5: ....

Extra Technology: ....

2.2.12 What the next page that the script will redirect? _____.

2.2.13 Is the php language case sensitive? _____.

2.2.14 Is XHTML code can be embedded directly into PHP document? _____.

2.2.15 Is it possible to submit a form without a submit button? _____.

2.2.16 Is client-side validation is enough for the input validation of the forms? _____.

2.2.17 To start using sessions in this script, _____ function is used at the

beginning of this page, to remove the session from the server, _____ function is

used.

[12 Marks]

Question 3

(2 marks)

3.1: What is the outputs of the following php scripts?

3.1.1
```php
<?php
$y = 2;
$w = 4;
$y *= $w /= $y;
echo $y."-".$w;
?>
```

_____

_____

_____

3.1.2
```php
<?php
for ($x = 0; $x <= 20; ++$x)
{    $x+=3;
    echo ++$x." ";

}
?>
```

_____

_____

_____

3.2: Write the following scripts that produce the following outputs?

(s)

3.2.1 Use HTML and CSS code to generate the following output   (3 marks)

- Use the following pictures (profile.png, password.png, twitter.png, facebook.png, google.png).
- Use colors (red, white) for buttons "log in" and "register".

Login

User name

....

Remember Me   Forgot Password?

Log in

Login
With your social media account

Twitter   Facebook   Google+

Don,t have an Account? Register Now!

REGISTER

ay

(s)

3.2.2 Write a Java Script function to validate the previous form that all fields are not empty, and the password field doesn't contain words (select, insert, delete, update) with alert box. (2 marks)

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ild

:)

3.2.3 Write a php script to generate (2 marks)

- a drop-down list contains years from 1950 to 2019
- a drop-down list contains months from January to December

3.2.4 Write a PHP script to push all ones in any given array to the end of it after ordering the array first, hint use function *sort()* to sort an array. (3 marks)

Example: Input: (1,2,3,1,4,6,10,7) -> output: (2,3,4,6,7,10,1,1)

[6 Marks]
Question 4

4.1 What is JP Morgan Chase data breach? According to your study in this course, how do they protect themselves against similar data breach in the future, what are php functions they should use? (3 marks)

4.1.1 What is JP Morgan Chase data breach?

5.2 A database with one table inside it with name _book_, which contains 3 fields (id as integer, name as varchar(100), **tele** as varchar(12)). Suppose that you have a file _dbConnection.php_ which include one class _dbConnection_ and two functions _dbConnect()_ and _dbDisconnect()_, this class is used to connect with database and disconnect from it.

Write a php script which describe the _phoneBookClass_ class and inherent from _dbConnection_ class. you need to write 2 functions inside this class, function _selectById(($id,$name,$tele)_ which select data from table _book_ with certain _id_ and return _1D array_ with the selected data and a function _updateRecord($id,$name,$tele)_ which update a record in the table for a certain _id_ and return a _Boolean variable_ if the record was updated or not. Be concise and clear.

Best wis
Dr. Mohamed Hai
Dr. Nour Eldeen Mahm

4.2.3 Use php to Find the only missing number in a sorted array

Example-1: Input: ar[] = {1, 3, 4, 5} ➡ Output : 2

Example-2: Input: ar[] = {1, 2, 3, 4, 5, 7, 8} ➡ Output : 6

Question 5 [7 Marks]

5.1 State True or False and correct the false statement if exists (3 Marks)

5.1.1 (   ) Google maps is one of the examples for web 3.0.

_____

5.1.2 (   ) The social web is essentially based on ontologies.

_____

5.1.3 (   ) In static websites, every page has to be saved separately on the server.

_____

5.1.4 (   ) Web frameworks are built to make building and working with programming languages easier.

_____

5.1.5 (   ) One of the disadvantages of dynamic websites difficult to update its content.

_____

5.1.6 (   ) A server is only a hardware component.

_____

4.1.3

```php
<?php
for ($x = 0; $x <= 10; ++$x)
    echo ++$x." ";
?>
```

_____

_____

4.2: Write the following scripts that produce the following outputs?

(9 mark

4.2.1 Use HTML to generate the following output

First name:
Ahmed
Last name:
Ali
Gender:
● male ○ female

Faculty FCI ▼
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4.2.2 Use php and CSS script to generate the following output. Table width="270px" and take 30p as cell height and width.
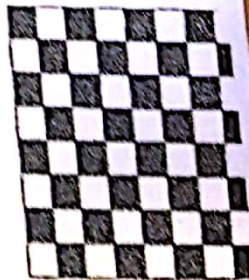
13: Is client-side validation is enough for the input validation of the forms?

1.14 To start using sessions in this script, _____ function is used at the beginning of this page.

1.15 The golden rule for securing php script is to _____ the input and _____ the output.

Question 4

4.1: What is the outputs of the following php correctly syntax scripts?   [15 Marks]

4.1.1   (6 Marks)

```php
<?php
$i = 0;
while ($i < 5)
{   $i+=2;  }
++$i;
echo $i;
?>
```

4.1.2

```php
<?php
$fname = array("Peter", "Ben", "Joe");
$age = array("35", "37", "43");
$salary = array(2303, 4420, 4630);
for ($i=0;$i<=sizeof($fname);$i++)
{ $merg[] = $fname[$i]." age is ".$age[$i];
$total+=$salary[$i]; }
print_r($merg);
echo "<br>";
echo $total;
?>
```

5/8

2.2 Mention four of the driving forces of IoT. (2 Marks)

....

....

....

PART II [30 Marks]

Question 3 [8 Marks]

```php
1  <?php
2  $news_id=$_GET["news_id"];
3  $con=mysql_connect("localhost","root","123");
4  mysql_select_db("news_db");
5  $q=mysql_query("select * from news_data where news_id=$news_id");
6  $row=mysql_fetch_array($q);
7
8  ?>
9
10 <form action="update_ok.php" method="post">
11 <input type="text" name="news_title" value="<?php echo $row["news_title"];?>" size=50>
12 <br>
13 <textarea name="news_details" cols=50 rows=20>
14 <?php echo $row["news_details"];?>
15 </textarea>
16 <input type="hidden" name="news_id" value="<?php echo $news_id;?>">
17
18 <br>
19 <input type="submit" name="btn" value="update News">
20 </form>
21
22 <?php mysql_close($con); ?>
```

Figure 1

Choose the Correct Answer According to Figure 1.

3.1 What is the database engine used in this script? _____.

3.2 This script used to _____ the data from table? (insert – select – update).

3.3 How many fields in the table that the script deal with? _____.

3.4 What is the type of the variable $row? (Array – Boolean – String).

3.5 What is the type of the variable $q? (Array – Boolean – String).

3.6 What will happen, if the line number 22 was removed, the script will (run without error – give a syntax error – I can't determine).

3.7 How many variables in the script? _____.

3.8: What is the line number, which the script holds invisible HTML variable_____.

3.9: What the next page that the script will redirect? _____.

3.10: Is the php language case sensitive? _____.

3.11: Is PHP code embedded directly into XHTML document? _____.

3.12: Is it possible to submit a form without a submit button? _____.