FINAL EXAM
FIRST SEMESTER SESSION 2011/2012

COURSE CODE / NAME : STIW3043 WEB ENGINEERING
DATE : 5 JANUARY 2012 (THURSDAY)
TIME : 9.00 – 11.30 A.M. (2 ½ HOURS)
VENUE : DSBK.TM

INSTRUCTION :

1. This book script contains TWO (2) sections with FIFTEEN (15) questions in TWELVE (12) printed pages excluding the cover page.
2. Answer ALL the questions in the space provided.
3. You are NOT ALLOWED to remove the exam paper from the examination hall.

MATRIC NO : ____________________________
(with word) ___________________________

IDENTIFICATION CARD NO : ____________

LECTURER : ____________________________

GROUP : ____________ TABLE NO : ____________

DO NOT OPEN THIS EXAMINATION PAPER UNTIL INSTRUCTED

CONFIDENTIAL
SECTION A  STRUCTURED QUESTIONS (70 MARKS)
Answer ALL QUESTIONS in the spaces provided

1. Web application consists of two main components client and server sides. Give TWO (2) disadvantages of applet. Describe the deployment of applet and servlet in developing these components effectively.  

(6 marks)

2. Web application can be divided into several categories and TWO (2) of them are "transaction oriented" and "service oriented". Describe about these categories and give ONE (1) example for each of them.  

(4 marks)
3. Briefly explain the essential of the following THREE (3) quality attributes for Web applications.
   i. Robustness
   ii. Immediacy
   iii. Availability

   (6 marks)

4. Explain briefly TWO (2) benefits why do we need modeling software application.

   (4 marks)

5. What is HyperText Tranfer Protocol (HTTP)? Explain why HTTP is known as stateless protocol.

   (4 marks)
6. State **TWO (2)** general security strategies in order to make our system more secure.  

   *(4 marks)*

7. Large Web development projects are commonly created by a group of people working together as a team. Briefly describe the job roles of project manager, content manager and Web developer.  

   *(3 marks)*

8. Explain the different between accessibility testing and usability testing.  

   *(4 marks)*
9. Explain briefly ALL rules for a certain class in order to be Bean class. (6 marks)

10. Explain why agility has become an important practice for developing web application. (3 marks)
11. Write a script that gets the current month and prints one of the following responses, depending on whether it's August or not:

It's August, so it's really hot.
Not August, so at least not in the peak of the heat.  

(3 marks)

12. Write an array variable of weather conditions with the following values: rain, sunshine, clouds, hail, sleet, snow, wind. Using the array variable for all the weather conditions, echo the following statement to the browser:

We've seen all kinds of weather this month. At the beginning of the month, we had snow and wind. Then came sunshine with a few clouds and some rain. At least we didn't get any hail or sleet.

Note: Don't forget to include a title for your page, both in the header and on the page itself.  

(8 marks)
13. Figure 1 is an input form named as insert_form.php that will be used by a user to insert name and age information. When the user click on the "Send info" button, the information will be sent to GetAndPost.php file using POST method. The detail of the code of Figure 1 is shown at Figure 2.

(6 marks)

![Figure 1 insert_form.php form](image)

Figure 1 insert_form.php form
<form method="POST" action="GetandPost.php">
Your name<br/>
<input type=text name=thename size=15><br/>
Your age<br/>
<input type=text name=theage size=15><br/>
<input type=submit value="Send info">
</form>

Figure 2: insert_form.php code

Using all the provided information, write a code for file GetandPost.php that will display this output:

Hi John, I know you are 30 years old
14. Figure 3 is a table named student that contain student information.

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>Matrix_no</th>
<th>email</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ahmad Adha</td>
<td>40987</td>
<td><a href="mailto:ahmadAdha@student.uum.edu.my">ahmadAdha@student.uum.edu.my</a></td>
</tr>
<tr>
<td>2</td>
<td>Zakaria</td>
<td>40988</td>
<td><a href="mailto:zakaria@student.uum.edu.my">zakaria@student.uum.edu.my</a></td>
</tr>
<tr>
<td>3</td>
<td>Aminah</td>
<td>40989</td>
<td><a href="mailto:aminah@student.uum.edu.my">aminah@student.uum.edu.my</a></td>
</tr>
<tr>
<td>4</td>
<td>Ahmad Razak</td>
<td>40990</td>
<td><a href="mailto:ahmadRazak@student.uum.edu.my">ahmadRazak@student.uum.edu.my</a></td>
</tr>
</tbody>
</table>

Figure 3: student table

From this table, extract the information using WHERE clause to display the output as shown in Figure 4. Please include database connection in your answer.

Database connection: host=localhost, username=root, password=abc123.

Database name= my_db.

(9 marks)

```
Student Name: Ahmad Adha
Matrix no: 40987
e-mail: ahmadAdha@student.uum.edu.my
```

Figure 4: Output for search data
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SECTION B (30 MARKS)
Answer ALL QUESTIONS

Scenario
EduTrend.com is a Malaysian company that focused on producing education based software products. Currently, it has more than one hundred employees. Its products have been accepted as teaching-aid for school not only in Malaysia but also in several Asian countries. Thus, the top management decides to develop a Web based Management Information System for easily managed its employees and customers, and a monitoring system for the data center.

The Web application should be able to:

- manage information related to employees and customers
- provide information as required by the management e.g. number of staffs, number of customers in certain area etc.
- protect all information by using an appropriate intelligent recovery technique

The monitoring system of the data center is necessary because it is located in a separate office. It is accessible only through locked doors controlled by magnetic identification cards. Maintenance and other technically necessary activities such as related to intra and internet connections to servers are always conducted during weekends. Backing up the data center power supply is a UPS (uninterruptible power supply) system which included a battery room and a diesel generator to recharge the batteries. Commercial city electricity power is fed through the battery packs to keep them continuously charged and to "clean" the commercial power of spikes and slumps in power delivery. The computer room will be cooled by air conditioners. It contains also an automatic fire suppression system. Data protection includes a backup and recovery system. Data, programs, and documentation are archived regularly and sent to off-site secure storage by a third party service contractor. Information system and data security is maintained through user accounts and passwords that are changed every six months. Disaster recovery procedures have been planned, including step-by-step instructions on major disasters.
15. Based on the given scenario, answer the following questions:

i. Assuming that your team has been assigned to handle the project and you are the project leader. As a leader, you are responsible to conduct the risk analysis of the project. Identify type of risks and possible risks for each type.

   (10 marks)

ii. Construct a use case diagram for the Web based Management Information System

   (10 marks)
iii. Draw a story card for **ONE (1)** of the main functionality of the Web based Management Information System

(5 marks)

iv. List **FIVE (5)** functionalities that need to be included in the server-side of the monitoring system for the data center

(5 marks)

END OF QUESTIONS

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