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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2015/2016**

**COURSE NAME : CONTENT MANAGEMENT  
SYSTEM**  
**COURSE CODE : BIW 33003**  
**PROGRAMME : 3 BIW**  
**EXAMINATION DATE : DECEMBER 2015/JANUARY 2016**  
**DURATION : 3 HOURS**  
**INSTRUCTION : ANSWER ALL QUESTIONS**

**THIS QUESTION PAPER CONSISTS OF SIX (6) PAGES**

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**Q1** (a) Discuss **THREE (3)** criteria to be considered in selecting a suitable open source Content Management System (CMS) for e-commerce solution.  
(9 marks)

(b) Consider a travel agency with a big vision. The company wants to grow to dominate the vacation package industry by performing the following tasks:

- It plans to handle 1,880 vacation packages of 10 types.
- Each week, 128 of these packages change in some way.
- In addition to its Web site, which it wants to redesign 3 times per year, the company plans to produce a printed catalog and a set of data sheets.
- The Company wants to personalize at least to the level of broad user segments by promoting the packages and extras that it predicts each of 4 audiences will be interested in.
- It has 10 authors and 4 complex sources of information (and, as luck has it, each vacation-package supplier has its own hard-to-convert format.

(i) Design the data array based on the task listed above for the travel agency.  
(10 marks)

(ii) Based on the **Q1(b)(i)**, calculate the complexity value of the vacation company.  
(3 marks)

(iii) Justify the needs of implementing Content Management System (CMS) for the travel agency based on your answer in **Q1(b)(ii)**.  
(3 marks)

Q2 (a) Question Q2(a)(i) and Q2(a)(ii) is based on Figure Q2(a).

ID	Name	Type	Author	EmployeeType	ImagePath	Pullquote	Text
1	401K	Standard	JoeA	FT	images/hr/joe	That boat is mir	<title>Our 401K pl:
2	Medical	Standard	DianeZ	FT	images/hr/con	My baby is safe	<title>Keep safe w
3	Dental	Extended	DianeZ	FT+	images/hr/laur	My gums and rr	<title>Just a pinch

Figure Q2(a)

- (i) Identify and explain **THREE (3)** types of metadata in **Figure Q2(a)**. (6 marks)
  
- (ii) Discuss why technique in **Figure Q2(a)** is often been used to store image in the database. (4 marks)
  
- (b) The following is the example of XML structure which is enhanced to show a variety of formatting metadata. Outline the function of <PUB>, <COMPONENT>, <PARA> and <FORMATTAG> in these codes.

```

<COLLECTION>
  <PUB DISPLAY="child">
    <SECTION>
      <NODE>
        <HEADER>...</HEADER>
        <COMPONENTS LAYOUT="table">
          <COMPONENT>
            <ELEMENT TYPEFACE="Arial">
              <PARA STYLE="body">
                Some <FORMATTAG>text</FORMATTAG>
              <COMPONENT>...</COMPONENT>
            </PARA>
          </ELEMENT>
        </COMPONENT>
      </COMPONENTS>
      <FOOTER>...</FOOTER>
    </NODE>
  </SECTION>
</PUB>
</COLLECTION>

```

(12 marks)

- (c) Figure Q2(c)(i) and Figure Q2(c)(ii) are the content access structures that use polyhierarchy style. Analyze the structure and suggest improvement to make it better.

(10 marks)

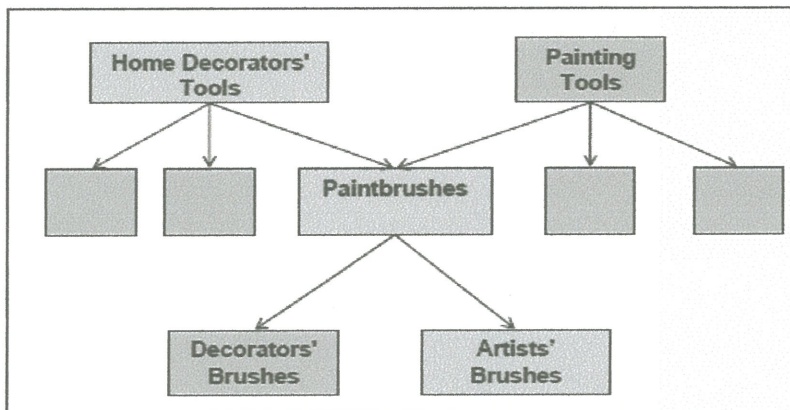


Figure Q2(c)(i)

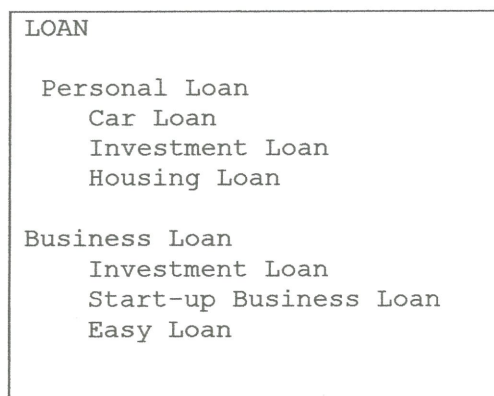


Figure Q2(c)(ii)

**Q3** Given the following case study:

ABC.com is an e-commerce system where users can browse to the website and search for anything they want to buy, in auction or right away from the buyer, or to post some item for sale which other users can search for as prospective buyers. The users then arrange for payments online (using PayPal system which is a separate system designed solely for that purpose and recently integrated onto their platform) and receive the item by mail. Like most internet-enabled business systems, XYZ.com requires scalability, high performance, high availability, and security. It needs to be able to handle large volumes of requests generated by the internet community and must be able to respond to these requests in a timely fashion.

The most recent statistic regarding ABC.com state that:

- It manages 250,000,000 registered users
- It manages over 1 Billion photos
- has nearly 10,500 live applications
- has 30 Software Architects in its employ
- averages well over 1 billion page views per day
- The platform handles 4.6 billion API calls per month
- 100,000+ lines of code are added every two weeks
- There are 30,000 software builds per week
- There are more than 35 billion SQL executions per day

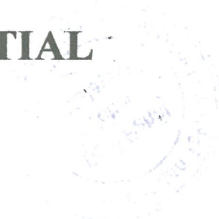
System that provided by ABC.com should support variations in load without human intervention. As more and more people join the internet, more and more users attempt to access the website and request information simultaneously and they must be serviced without fail.

- (i) Identify and explain **THREE (3)** areas that need to be highly considered for the reliability of the system.

(9 marks)

- (ii) Proposed **FIVE (5)** activities to increase the scalability of the system.

(15 marks)



**Q4 (a)** Differentiate between customization and personalization. (2 marks)

(b) Describe an example on how to produce a personalized automotive web site. (3 marks)

(c) (i) Reorganize the following components into a database table using fully parsing structured text approach. (6 marks)

```
<TEXT><TITLE>We now do Teeth!</TITLE>  
      <PULLQUOTE><B>My gums never felt so good.</B>  
<IMAGE>laurasmile.jpg</IMAGE>  
      </PULLQUOTE>  
<H1>a paragraph of text here</H1>  
<H2>a paragraph of text here</H2>  
<H1>a paragraph of text here</H1>  
<CONCLUSION>  
Put your mouth where our money is-<B>use the plan!</B>  
</CONCLUSION></TEXT>
```

(ii) Explain whether the technique in Q(4)(c)(i) is suitable to perform the conversion. (3 marks)

(d) The following Table of Contents is a menu list for a company's intranet. Rearrange all the menu and submenu in a relational database table without losing the structure hierarchy.

```
New Page  
  Site 1  
  Site 2  
Press Released  
  Industry  
    Story 1  
    Story 2  
Company  
  Story 1  
  Story 2
```

(5 marks)

**- END OF QUESTION -**