



## **FACULTY OF SCIENCE**

### **ACADEMY OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING**

<b>MODULE</b>	<b>IFM2B10/IFM02B2</b> <b>INTERNET BASED ELECTRONIC COMMERCE</b>
<b>CAMPUS</b>	<b>APK</b>
<b>Examination</b>	<b>NOVEMBER 2019</b>

**DATE:** 18 November 2019

**SESSION:** 08:30 – 11:30

**ASSESSORS:**

R MALULEKA  
K LEBEA

**INTERNAL MODERATOR:**

D COTTERRELL

**DURATION:** 120 MINUTES

**MARKS:** 100

---

#### **PLEASE TAKE CAREFUL NOTE OF THE FOLLOWING:**

1. Answer all questions in the supplied answer sheet.
2. Do not write in pencil.
3. Write neatly and legibly.
4. Answers must pertain to the material covered during the course of the module.
5. Calculators may not be used.
6. This question paper consists of four (4) pages, including this cover page.
7. This question paper consists of nine (9) question sections.

### **QUESTION 1**

- 1.1 How do the three waves of electronic commerce compare with regard to funding, and the distribution of digital products? (6)
- 1.2 Discuss what EDI is, and how businesses implement it. Include the full name of the given acronym. (4)

[10]

### **QUESTION 2**

- 2.1 Extensible Markup Language (XML) is a markup language that is increasingly being used to tag information that companies share with each other over the Internet. Describe the attributes of XML. (4)
- 2.2 Name, and briefly discuss the uses of, the two main protocols of the Internet. (4)
- 2.3 Define what a VPN is, and how it is used to send private messages over a public network. (2)

[10]

### **QUESTION 3**

BuddyBook is a popular website that provides all the usual functionality of modern social networking platforms as well as multiplayer online games. Visitors can access all the social networking features for free, and only pay a fee to play the online games. BuddyBook monetizes their free users by serving advertisements, and allowing visitors to play a limited amount of games for free to entice them to pay for access to the rest.

- 3.1 Name two e-commerce revenue models that match the revenue strategies used by BuddyBook. Motivate your answers. (4)
- 3.2 Briefly discuss one of the revenue models you suggested in 3.1. (4)
- 3.3 What functionality do all modern social networking websites provide? (2)

[10]

### **QUESTION 4**

- 4.1 Name and discuss the three key elements of a brand. (6)
- 4.2 Explain how a reverse auction works, and what supply chain characteristics discourage B2B reverse auctions. (4)

[10]

### **QUESTION 5**

- 5.1** Businesses make a distinction between direct and indirect materials. Consider the manufacture of a furniture. Name one direct, and one indirect material used in the manufacturing process. Motivate your answers. **(4)**
- 5.2** Compare how businesses purchase direct and indirect materials. **(4)**
- 5.3** Define knowledge management. **(2)**
- [10]**

### **QUESTION 6**

- 6.1** E-mail is the most popular form of business communication. However, it does have some drawbacks. Give two potential drawbacks of using E-mail. **(2)**
- 6.2** Discuss the two approaches that Web developers can take to creating dynamic content. Give an example of a language or framework that can be used for each approach. **(6)**
- 6.3** Briefly discuss how a white list spam filter works. **(2)**
- [10]**

### **QUESTION 7**

- 7.1** Discuss how hash functions are used, together with public-key encryption systems, to verify that messages have not been altered in transit. **(5)**
- [5]**

### **QUESTION 8**

RoadAssist is a software development firm that specialises in automotive insurance industry systems. They develop and maintain software that helps call centre operators to handle emergency roadside calls and locate and assign first responders based on their proximity to the client. The system also handles billing and claiming with insurance providers.

As an employee of RoadAssist as a code analyst. Your job role is to review the code and evaluate whether the systems that have been developed are ready to go into production and deployed to the different companies that RoadAssist serves.

While in the last phase of testing their latest software, you noticed a bug in the system. The fault you identified causes calls to sometimes be dropped instead of being queued when all operators are busy. Because the call centres handling life-and-death emergency calls, this glitch has potentially life-threatening consequences. After you reported the issue to the project manager and strongly insisted

that the system has to go back to development and worked on again, the project manager asked that you not report the issue to anyone.

The project manager's reasoning was that the project was already past its expected completion date, and that a large number of the production team has not been paid in months as a result. Any delay would cause RoadAssist to lose the contract and revenue that they desperately need to back pay all the people who are dependent on the company. The project manager instructed you to ignore the fault for the meanwhile so that the system can be deployed and RoadAssist can receive payment while they work on a patch that will be deployed to fix the issue.

**8.1** As an IT professional, would you carry out your boss's instructions? **(10)**

Justify your answer by referring to any professional code of ethics that you have learned during the semester. Include in your discussion if you think IT professionals need to have a code of ethics, and the reasons for your choice.

**[10]**

### **QUESTION 9**

**9.1** What are three purposes of a MasterPage in an ASP.Net Web application? **(3)**

**9.2** Name 2 ways of maintaining state. **(2)**

**9.3** Name and describe 2 types of shopping carts. In your description, detail a scenario that would best suit each kind of cart. **(6)**

**9.4** Name and discuss 2 levels where reporting is important, include which stakeholders they are relevant to. **(4)**

**9.5** Implement the following function. The connection to the database is called Exam.dbml, the user object has been created for you using the database table shown below: **(10)**

```
namespace SemesterTest1Service
{
    [ServiceContract]
    public interface IService1
    {
        [OperationContract]
        bool EditName(User u);
    }
}

CREATE TABLE [dbo].[SystemUser] (
    [Id] INT IDENTITY (1, 3) NOT NULL,
    [Name] VARCHAR (50) NOT NULL,
    [Surname] VARCHAR (50) NOT NULL,
    [Email] VARCHAR (50) NOT NULL,
    [Password] VARCHAR (MAX) NOT NULL,
    [Active] BOOL NOT NULL,
    PRIMARY KEY CLUSTERED ([Id] ASC)
);
```

**[25]**

**TOTAL: 100 MARKS**