



FACULTY OF SCIENCE

ACADEMY OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING	
MODULE	IFM2B10 INTERNET BASED ELECTRONIC COMMERCE
CAMPUS	APK
EXAM	NOVEMBER 2016

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DURATION: 120 MINUTES

MARKS: 100

NUMBER OF PAGES: 5

PLEASE TAKE CAREFUL NOTE OF THE FOLLOWING:

1. Answer **ALL** questions **ONLY** in the supplied **ANSWER SHEET**.
 2. Do **NOT** write/draw in pencil. Anything in pencil **WILL NOT BE MARKED**.
 3. Write **neatly** and **legibly**.
 4. Answers must pertain to the material covered during the course of the module.
 5. **NO** calculators may be used.
 6. The paper consists of **10 question sections**.
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QUESTION 1

- 1.1 What is the difference between E-Business and E-Commerce. (2)
- 1.2 Briefly discuss the Third Wave of E-Commerce. (3)
- 1.3 In order to make the ARPANET more accessible, an Open Architecture for the global network was developed. (2)
The Open Architecture promoted the use of a set of common protocols and had four key message-handling rules in the network. This Open Architecture is considered to have vastly contributed to the Internet's success. Name two message handling rules used by the open architecture.
- 1.4 One of the advantages of using E-mail as a form of communication is the ability to exchange files that are attached to the messages. Provide the full name of the protocol used for handling binary files attached to email messages. (1)

[8]

QUESTION 2

- The massive increase in E-Commerce activities has led to greater use of the Web by marketing professionals and retail companies. Although to successfully use the Internet as a business channel, there are some key issues that need to be considered. List five key issues involved with developing usable E-Commerce websites. (5)

[5]

QUESTION 3

- On the Web, the client-server architecture allows client devices to communicate with web server computers using the HTTP protocol. By means of a diagram, illustrate how a client and a server computer communicate in a two-tier client/server architecture using the HTTP protocol. (6)

[6]

QUESTION 4

- 4.1 Web Services can be used to provide different applications to the same set of functions that need to be performed in different systems. Such Web services can be developed using different approaches. Fully discuss SOAP Web Services. (8)
- 4.2 Name two website hosting alternatives. (2)

[10]

QUESTION 5

- 5.1 Security is of utmost importance on web-based applications. Given that E-Commerce usually involves financial transactions, the amount of risk involved in these transactions is rather large. List four requirements that must be met to try ensure secure electronic commerce. (4)
- 5.2 Discuss Digital Certificates. (6)
- 5.3 Briefly describe how a Digital Signature is made. (4)

[14]

QUESTION 6

The Wacky Races Management (WRM) Group is a global organisation that runs and promotes the Wacky Races car racing championship. The championship is made up of racing teams which compete against each other in many racing events across the world. The races are held all over the world, in very exotic locations. Fans of the sport travel around the world to watch the races live, while others resort to watching some of the races on Pay-TV (e.g. DsTV). The racing teams have very skilled and high profile drivers.

WRM Group has currently been experiencing problems reaching their fan base in this year's championship season. The championship this year has a new set of rules in the design of the racing cars, the operations followed in the racing events, and has also expanded to go racing in far more locations than in any other year before. The addition of new racing events in faraway locations has distanced the fans from the sport even further, since travelling is very expensive and race tickets can also be quite costly. The fans also don't understand many of the new rules and don't have access to any source of information. Following the races is also quite difficult since they are only accessible if you have a Pay-TV subscription or if you are at the race track.

The CEO of WRM Group has asked you, their newly assigned E-Business Strategist to help find a way to reach Wacky Races' fans better by strengthening the company's web presence. The company wants to make better use of digital services in the business, get the fans "closer" to the action through online services in all platforms (i.e. mobile and desktop) and to also help improve their brand awareness in the public. The CEO refers to the website and mobile application the company needs as a "digital platform".

An important aspect she has requested is that their digital platform should allow fans around the world to interact with each other on forums in the website so they can discuss all developments in the sport. Fans should be able to get all the latest information on the sport and also follow up on races live (e.g. through live text and audio commentary, video feeds, etc.) on their digital platform. The platform can also serve as a source of detailed information about the new regulations of the sport, as well as of interviews with the sport's stars.

The CEO would like to provide certain features of their digital platform free of charge to visitors, but understands that because of the complexity of certain features there may be some charges that registered visitors will have to pay. She is not sure if everything should be free, or if everything should be available for a fee, or if there should be a balance of free content and paid content.

They have called you in to help them in setting up their digital strategy, in terms of how they can generate revenue, some of the benefits the company can get with this initiative and what costs they will need to try to cover. Answer the following questions to help WRM Group decide on how they will be managing their new digital platform.

- 6.1** Using only the information in the case study, list two revenue models that could fit WRM Group's needs. **(2)**
- 6.2** Select and briefly discuss the revenue model you suggest is most appropriate for WRM Group's new digital platform. (i.e. Select only ONE revenue model out of the two suggested in **Question 6.1**) **(4)**
- 6.3** In your own words and with reference to the case study, how would you say your suggested revenue model in **Question 6.2** best fits WRM Group's needs. **(4)**
- 6.4** Identify three E-Commerce objectives for WRM Group's digital platform, and briefly explain how the company can measure their success at each one. **(6)**

QUESTION 7

- 7.1** Discuss Digital wallets. (3)
- 7.2** Briefly explain how a closed loop payment system works? (3)
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- [6]**

QUESTION 8

SimplyTech is a software development company in Johannesburg. Made up of 50 employees (including developers, designers, analysts and project managers). The company provides its services at relatively lower costs than its competitors and promises to deliver work of higher quality than some of the most of its competition, while providing the best service in the industry. They started a marketing campaign to promote their services to small-to-medium enterprises in the city.

LetsShopMzansi (LSM), a Start-Up online retail company decided to seek the services of SimplyTech. LSM approached SimplyTech to develop their entire group shopping website. Among many requirements, the website maintained a large product catalogue, had to record personal information of its clients (e.g. full names, ID numbers, phone numbers, email addresses, physical addresses, credit card details, purchase information, etc.) and had to process financial transactions when clients pay for the items they would like to get from LSM. SimplyTech would be in charge of developing the entire system and would thus have access to all of LSM's data and business model.

In order to convince LSM that SimplyTech would deliver on all their expectations and go beyond the call of duty, the project manager promised LSM's IT Manager that the system would be completed within 30 working days, that it would have an absolutely unique design, would be absolutely secure and reliable to LSM's clients.

After having made all of these promises, the project manager called you (the lead developer at SimplyTech) to discuss the development of the system. After having told you of all of the promises, the project manager ordered you to make sure the system gets developed quickly and that to save time you should do the following:

- Copy the design of a similar company based in the United States,
- Not use any data encryption techniques to keep personal information secure since that would take so much time,
- Not get accredited security digital certificates for the website as that would reduce the amount of profit that SimplyTech will make on the project,
- Hard code any part of the system just so it is much faster to deliver to the client,
- Not place any comments in the code to force LSM to always go back to SimplyTech if ever they need an update, and
- Leave backdoors on the system's server just so SimplyTech keeps access rights to the system after having sold it to LSM.

The project manager's reasoning was that the marketing campaign was very successful and he had already committed to the same promises to 50 other clients, so you as the lead developer had no choice but to do it.

As an IT professional, would you carry out the project manager's instructions? (10)

Justify your answer by referring to any professional code of ethics that you have learned during the semester.

Also 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** Describe how a shopping cart can be implemented using session variables in an ASP.NET web application. **(5)**
- 9.2** Write Visual Basic/C# code to write the value "Hello World" to a session variable named "EXAM" in an ASP.NET web application. Provide only the line that will achieve this. **(3)**

[8]

QUESTION 10

- 10.1** Write a JavaScript function called setResult that accepts a single string parameter. The parameter should be placed as the content of a div tag named divResult on the page. **(5)**
- 10.2** Write CSS for a class with the name bigGreen, that doubles the text size and make it green. **(4)**
- 10.3** Provide the full HTML code for a page that contains a single heading displaying the text "My heading". The page's title must be set to "Informatics 2B Exam". **(8)**

[17]

TOTAL: 100 MARKS