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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : PROFESSIONAL ETHICS AND OCCUPATIONAL SAFETY
COURSE CODE : BIC 21102
PROGRAMME : 2 BIS / 2 BIP / 2 BIW / 2 BIM
EXAMINATION DATE : JUNE 2014
DURATION : 2 HOURS AND 30 MINUTES
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF NINE (9) PAGES

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- Q1** (a) Figure Q1(a) shows Milestones in Information Storage and Retrieval. Based on Figure Q1(a), explain **THREE (3)** impacts *of it on human lifestyle.*

- Codex
- Gutenberg's Press
- Newspaper
- Hypertext
- Graphical User Interface
- Single Computer Hypertext systems
- Networked Hypertext: world wide web
- Search Engines

FIGURE Q1(a)

(6 marks)

- (b) Answer Q1(b)(i) and Q1(b)(ii) based on Figure Q1(b).

The following are acts passed by US Congress regarding Privacy Protection.

- Communications Act of 1934
- FOIA -The Freedom of Information Act passed in 1966
- FCR - Fair Credit Reporting Act of 1970
- Privacy Act of 1974

In 2004, the Federal Trade Commission (FTC) accused two companies of collecting personal information from children online without their parent's consent, and settled with them for penalties of USD75,000 and USD400,000.

FIGURE Q1(b)

- (i) List **TWO(2)** affected companies.

(2 marks)

- (ii) Explain the act involved in the accusation.

(2 marks)

- Q2** (a) Apply 8 principles of Ethics in Software Engineering to analyze the scenario in Figure Q2. Details of the principles can be found in Appendix 1.

En. Hazli is a CEO of KuasaSuper Sdn. Bhd., a company that develops online system. En. Hazli is one of the active members in local technology portal www.hakimtech.com. En. Hazli asks for free advice on Firewall package on the portal. Dr. Siti who is also a member in that particular portal answers En. Hazli's questions and she recommends top-ranked package BoboyBoi Firewall Package from LineClearPower Technology Sdn. Bhd. Dr. Siti is actually a share partner in the company which develops the firewall but she never revealed that to En. Hazli regards to her financial interest in the software. Meanwhile in the market, there are few others Firewall packages available and some of them even have got "Best Buy" and "Quality Product" ratings.

Did Dr. Siti do anything wrong?

Adopted from Quinn (2011)

FIGURE Q2

(10 marks)

- Q3** (a) Describe **TWO (2)** categories of Health Effects and give **ONE (1)** example for each category.

(4 marks)

- (b) Figure **Q3** is a photo of a worker who is welding a steel rod. Analyze the security measures that the worker should exercise in order to minimize accidents and hazard.

(5 marks)

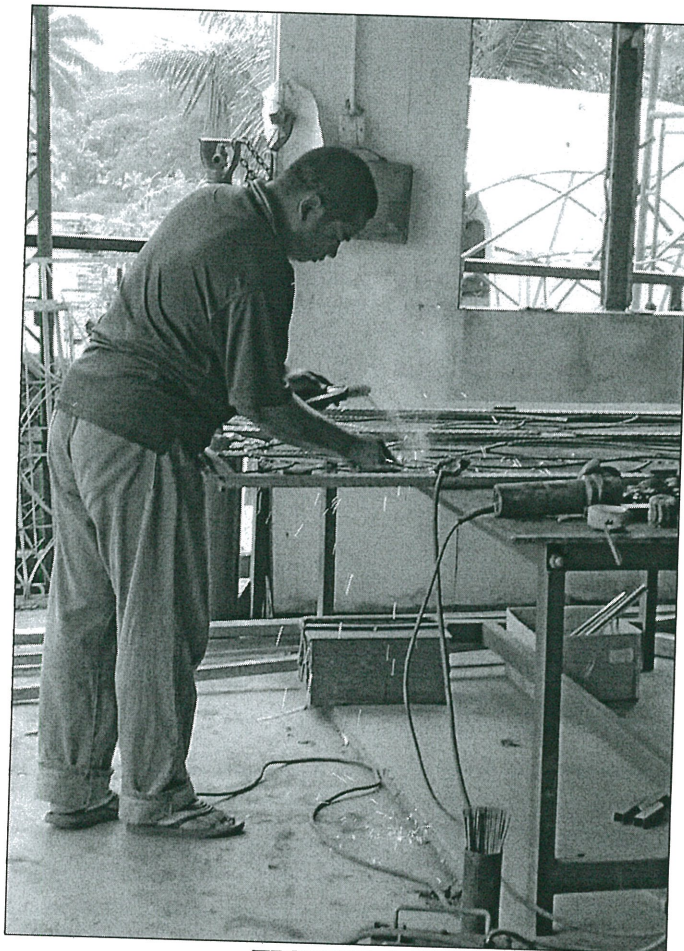


FIGURE Q3

- (c) Demonstrate your understanding on Malaysia **Occupational Safety and Health Act 1994 (OSHA 1994)**. Relate your answer to Figure **Q3**.

(15 marks)

Q4 (a) Explain each function of privacy in Figure Q4(a).

- 1. Personal autonomy
- 2. Emotional release
- 3. Self-evaluation
- 4. Limited and Protected communication

FIGURE Q4(a)

(10 marks)

(b) Explain each expectation in Figure Q4(b). Include **ONE (1)** example for each explanation.

- 1. The expectation of anonymity
- 2. The expectation of fairness and control over personal information
- 3. The expectation of confidentiality

FIGURE Q4(b)

(6 marks)

Q5 (a) Shows how Figure Q5(a) is related to Information System Ethics.

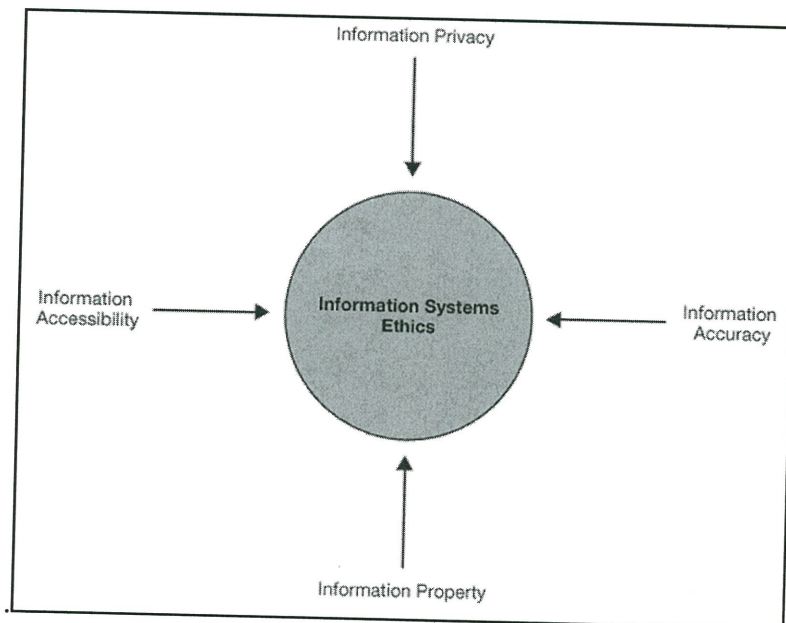


FIGURE Q5(a)

(10 marks)

- (b) Describe the differences between Trademark and Copyright based on Figure Q5(b).

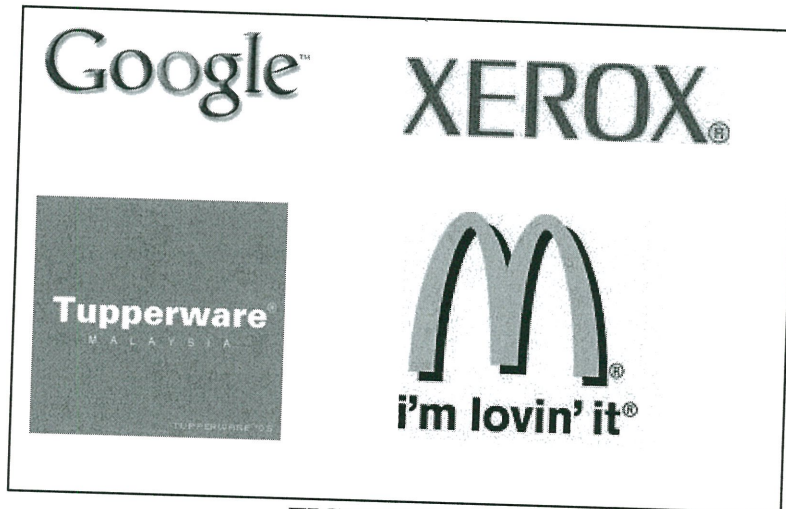


FIGURE Q5(b)

(10 marks)

-END OF QUESTION-

FINAL EXAMINATION

SEMESTER/SESI:	SEM II 2013/2014	PROGRAM:	2 BIW/ 2 BIM/ 2 BIE/ 2 BIS/ 2 BIS
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APPENDIX 1

8 PRINCIPLES OF ETHICS IN SOFTWARE ENGINEERING

Principle 1: Act Consistently with Public Interest

- 1.01 "Accept full responsibility for own work"
- 1.02 Balance competing interests
- 1.03 Approve software only if it is safe
- 1.04 Disclose actual/potential dangers
- 1.05 "Cooperate in efforts to address" public concerns
- 1.06 "Be fair and avoid deception in all statements"
- 1.07 Consider factors that diminish access to software
- 1.08 "Volunteer professional skills to good causes"

Principle 2: Act in Best Interest of Client, Employer

- 2.01 Act within areas of competence
- 2.02 Don't use software obtained illegally
- 2.03 Only use property in authorized ways
- 2.04 Ensure documents are approved
- 2.05 Respect confidentiality
- 2.06 Promptly report problems with project
- 2.07 Report issues of social concern
- 2.08 Refuse outside work detrimental to job
- 2.09 Put employer's/client's interests first, unless overriding moral concern

Principle 3: Ensure Products Meet Highest Standards

- 3.01 Aim for "high quality, acceptable cost and a reasonable schedule," making trade-offs clear
- 3.02 "Ensure proper and achievable goals"
- 3.03 Face up to "ethical, economic, cultural, legal and environmental" issues
- 3.04 Ensure you are qualified for proposed work
- 3.05 Use appropriate project methodologies
- 3.06 Follow the most appropriate professional standards
- 3.07 "Strive to fully understand the specifications"
- 3.08 Ensure the specifications are correct and approved
- 3.09 "Ensure realistic quantitative estimates of cost, scheduling, personnel, quality and outcomes"
- 3.10 "Ensure adequate testing, debugging, and review of software and related documents"
- 3.11 "Ensure adequate documentation"
- 3.12 Develop software and documents that respect privacy of those affected by software
- 3.13 Use only accurate data appropriately acquired
- 3.14 Maintain data integrity
- 3.15 Use same standards for software maintenance as software development.

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APPENDIX 1 (CONT.)

Principle 4: Maintain Integrity in Professional Judgment

- 4.01 "Temper all technical judgments by the need to support and maintain human values"
- 4.02 Understand and agree with documents before endorsing them
- 4.03 Remain objective when evaluating software or related documents
- 4.04 Do not engage in deceptive financial practices
- 4.05 Disclose conflicts of interest
- 4.06 Do not participate in decisions in which you, your employer, or your client has a potential conflict of interest

Principle 5: Promote Effective Project Management

- 5.01 Ensure good project management procedures
- 5.02 Ensure software engineers know standards
- 5.03 Ensure software engineers know policies and procedures for protecting confidential information
- 5.04 Take employees' abilities into account before assigning work
- 5.05 Ensure reasonable estimates are made
- 5.06 Give full and accurate information to potential employees
- 5.07 Pay employees fairly
- 5.08 Do not unjustly prevent a qualified person from taking a job
- 5.09 Work out fair intellectual property agreements
- 5.10 Provide employees charged with misconduct due process
- 5.11 Do not ask someone to do anything violating the Code
- 5.12 "Do not punish anyone for expressing ethical concerns about a project"

Principle 6: Advance the Profession

- 6.01 Help create an environment supporting ethical conduct
- 6.02 "Promote public knowledge of software engineering"
- 6.03 Participate in professional activities
- 6.04 Support others who are trying to follow this Code
- 6.05 Do not promote self-interest at expense of profession, client, or employer
- 6.06 Obey all laws unless there is an overriding public interest
- 6.07 Do not deceive others regarding the characteristics of software
- 6.08 Take responsibility for finding, correcting, and reporting errors in software and documentation
- 6.09 Ensure others know you are committed to the Code and what that means
- 6.10 Do not associate with businesses and organizations that are in conflict with Code
- 6.11 Understand violating the Code is inconsistent with being a professional
- 6.12 Share concerns about Code violations with the people involved
- 6.13 "Blow the whistle" when no alternative to reporting significant Code violations.

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APPENDIX 1 (CONT.)

Principle 7: Be Fair to and Supportive of Colleagues

- 7.01 "Encourage colleagues to adhere to this Code"
- 7.02 "Assist colleagues in professional development"
- 7.03 Give others the credit they deserve
- 7.04 Be objective when reviewing the work of others
- 7.05 Give colleagues a fair hearing
- 7.06 Help colleagues remain aware of work practices
- 7.07 Do not unfairly interfere with another's career, but protect the public interest
- 7.08 Bring in experts for situations outside your own area of competence.

Principle 8: Participate in Lifelong Learning

- 8.01 Stay current with developments in field
- 8.02 Improve ability to create high quality software
- 8.03 Improve ability to produce high quality documentation
- 8.04 Improve understanding of software and documentation used in work
- 8.05 Improve knowledge of relevant standards
- 8.06 Improve knowledge of this Code and its application
- 8.07 Do not treat others unfairly because of prejudices
- 8.08 Do not influence others to break the Code
- 8.09 "Recognize that personal violations of this Code are inconsistent with being a professional software engineer".