



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)
Academic Year 2018 – 3rd Year Examination – Semester 5

IT5105: Professional Issues in IT
Structured Question Paper

19th May, 2018
(TWO HOURS)

To be completed by the candidate

BIT Examination Index No:

Important Instructions:

- The duration of the paper is **2 (two) hours**.
- The medium of instruction and questions is English.
- This paper has **4 questions** and **16 pages**.
- **Answer all questions.** All questions carry similar marks.
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.
- Calculators are **not** allowed.

Questions Answered

Indicate by a cross (x), the numbers of the questions answered.

	Question numbers				Total
	1	2	3	4	
To be completed by the candidate by marking a cross (x).					
To be completed by the examiners:					

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Case Study

HP CEO Forced Out; Lands on Feet at Oracle

In early 2005, Mark Hurd was hired as the CEO of Hewlett-Packard Company (HP). Under Hurd's leadership from 2005 to 2009, the HP share price more than doubled, while its revenue grew over 40 percent to \$115 billion. This was accomplished by extreme cost-cutting measures, including the reduction of 50,000 jobs and the acquisition of several major technology firms, including Palm, 3Com, and Electronic Data Systems.

In June 2010, an HP contractor accused Hurd of sexual harassment. The contractor's work involved planning various HP-hosted CEO forums over the course of two years, and she often dined alone with Hurd following these events. She claimed that her work for HP stopped after she refused Hurd's advances. During the ensuing investigation of the sexual harassment charge, HP found evidence of false expense reports covering payments made to the woman. While HP executives said that the sexual harassment charge could not be substantiated, they did find that Hurd had violated HP's standards of business conduct. Michael Holston, HP executive vice president and general counsel, stated that Hurd's actions "demonstrated a profound lack of judgment that seriously undermined his credibility and damaged his effectiveness in leading HP." The board urged Hurd to resign from the company.

Hurd, married with two children, denied making any advances toward the contractor and stated that he never prepared his own expense reports. He refused to resign and instead offered to reimburse the company the disputed expense payments. After numerous discussions with members of the board, Hurd finally agreed to resign and to repay HP the disputed expense payments. He also settled the sexual harassment charges out of court, agreeing to pay the woman an undisclosed amount of his own money.

Within a month of his resignation, computer technology giant Oracle announced that it had hired Mark Hurd as its new co-president. The hiring raised several issues as Hurd's severance package of \$40 million included a confidential nondisclosure agreement restricting what Hurd could tell future employers about HP plans and operations. HP filed a lawsuit asking the court to prevent Hurd from taking the job with Oracle, saying "HP is threatened with losing customers, technology, its competitive advantage, its trade secrets and goodwill in amounts which may be impossible to determine."

Hiring disputes are common among technology companies. However, in California (where both Oracle and HP are headquartered), courts have encouraged employee mobility and allowed people who change jobs to continue working in their area of expertise.

Within a month, HP and Oracle settled the dispute and "reaffirmed their long-term strategic partnership." Hurd agreed to "adhere to his obligations to protect HP's confidential information while fulfilling his responsibilities at Oracle." In addition, Hurd agreed to waive his right to over 345,000 restricted shares of HP stock valued at \$13.6 million.

Use the above case study to answer Question 1.

- (1) (i) Given below are some statements about the use of information technology by different categories of people in society today. Identify whether these actions are ethical or unethical. **(6 x 1 mark)**
- (a) A developer should approve software only if they have a well-founded belief that it is safe, meets specifications, passes appropriate tests, and does not diminish quality of life, diminish privacy or harm the environment. The ultimate effect of the work should be to do the public good.
 - (b) Millions of people have downloaded music and movies at no charge and in apparent violation of copyright laws at tremendous expense to the owners of those copyrights.

- (c) Organizations contact millions of people worldwide through unsolicited email (spam) as an extremely low-cost marketing approach.
- (d) Hackers break into databases of financial and retail institutions to steal customer information, then use it to commit identity theft—opening new accounts and charging purchases to unsuspecting victims.
- (e) Students around the world have been caught downloading material from the Web and plagiarizing content for their assignments.
- (f) Software piracy within the boundaries of third-world countries may be tolerated to allow those countries an opportunity to move into the information age.

ANSWER IN THIS BOX

- (a) Ethical
- (b) Unethical
- (c) Unethical
- (d) Unethical
- (e) Unethical
- (f) Unethical

- (ii) Select an appropriate word or set of words from the list given below the table to fill the blanks in the column B.

(5 x 1 mark)

	Column A	Column B
(a)	This enables an organization to review how well it is meeting its ethical and social responsibility goals and communicate new goals for the upcoming year	Code of ethics
(b)	This is a set of beliefs about right and wrong behavior within a society	Ethics
(c)	This approach to an ethical decision focuses on how fairly actions and policies distribute benefits and burdens among people affected by the decision.	Fairness approach
(d)	These are one's personal beliefs about right and wrong	Morals
(e)	This entity provides an organization with vision and leadership in the area of business conduct	Corporate ethics officer

(Morality, Ethics, Vices, Code of Principles, Morals, Code of Ethics, Board of Directors, Social Audit, Fairness Approach, Brainstorming, Corporate Ethics Officer, Utilitarian Approach.)

(iii) Cite one example each for which an organization may have to face lawsuits with respect to sexual harassment and racial harassment.

(2 marks)

ANSWER IN THIS BOX

A company that allows activities such as the following using **computer resources at work place**:

- viewing sexually explicit material using Internet
- sharing lewd jokes
- sending hate Emails
- spreading false rumors through social media networks in order to create social disharmony
- or any other acceptable answer

(iv) Define the terms given in the answer box.

(6 x 2 marks)

ANSWER IN THIS BOX

(a) Industrial Spy

Captures trade secrets and gain competitive advantage

(b) Cyberterrorist

Destroys infrastructure components of financial institutions, utilities, and emergency response units

(c) Malicious Insider

Gains financially and/or disrupt company's information systems and business operations

(d) Hacker

Tests limits of system and/or gain publicity

(e) Trade Secret

Undisclosed information that have commercial value. Must be protected against breach of confidence and other acts that are contrary to honest commercial practices. However, reasonable steps must have been taken to keep the information secret.

(f) Nondisclosure Agreement/Clause

Terms of an employment contract that prohibit a departing key employee from revealing secrets such as trade secrets, computer programs or reveal the details of software owned by the firm.

- (2) When there are tens of millions of users of social networking web sites, not everyone is going to be a good “neighbor” and abide by the rules of the community. Many will stretch or exceed the bounds of generally accepted behavior.

- (i) Name four (04) common ethical issues that can arise for members using social networking web sites.

(4 x 1 mark)

ANSWER IN THIS BOX

(a) cyberbullying

(b) cyberstalking

(c) encounters with sexual predators

(d) uploading of inappropriate material

Consider the following description to answer parts (ii) to (v).

Internet watchdog groups have long warned that Facebook, a social networking web site was being used to distribute hate speech about ethnic minorities in Sri Lanka. The Sri Lankan government imposed a temporary ban of the use of Facebook, Instagram, and WhatsApp in March 2018 in order to quell violence throughout the country. The government asked internet service providers (ISPs) to block messaging apps after the discovery of Facebook posts encouraging violence towards the country's Muslim population. Facebook said on Thursday, 15th March 2018, that it has clear rules against hate speech and incitement to violence. "We are responding to the situation in Sri Lanka and are in contact with the government and nongovernmental organizations to support efforts to identify and remove such content," the company said in a statement.

- (ii) Name three (03) measures employed by social networking web sites to avoid the posting of objectionable material.

(3 x 1 mark)

ANSWER IN THIS BOX

- The terms of use agreement for most social networking Web sites states that the Web site reserves the right to delete material or terminate user accounts that violate the site's policies
- The Web sites employ people to review material submitted and remove such material
- When other users sometimes report objectionable material they are deleted from the site
- Material deleted on a court order

Or any other acceptable answers

- (iii) In your opinion, why did Facebook authorities not respond immediately to this situation in Sri Lanka without the government of Sri Lanka having to resort to a temporary suspension of their services.

(2 marks)

ANSWER IN THIS BOX

Insufficient resources to analyze local languages to identify and remove such objectionable content or any other acceptable answer

(iv) How can Sri Lanka prevent the misuse of social media networks in future?

(2 marks)

ANSWER IN THIS BOX

Introducing lawful interception with adequate technical capabilities and legal provision or any other acceptable answer

(v) How could the government use the social media networks as valuable source of information or intelligence?

(4 marks)

ANSWER IN THIS BOX

It provides the state with the current thinking of the public

Provides indications of events that could happen in the immediate future

(vi) Identify two(2) significant advantages that social network advertising has over other forms of more traditional advertising media (e.g., radio, TV, and newspapers).

(2 marks)

ANSWER IN THIS BOX

- Advertisers can create an opportunity to generate a conversation with viewers of the advertisement
- Advertisements can be targeted to reach people with the desired demographic characteristics.

(vii) What is meant by viral marketing?

(1 mark)

ANSWER IN THIS BOX

It is an approach to advertising that encourages individuals to pass along a marketing message to others, thus creating the potential for exponential growth in the message's exposure and influence.

(viii) Define what is meant by cyberbullying. What is the difference between cyberbullying and cyberstalking?

(2 x 2 marks)

ANSWER IN THIS BOX

Cyberbullying is the harassment, torment, humiliation, or threatening of one **minor** by another minor or group of minors via the Internet or cell phone.

Cyberstalking is threatening behavior or unwanted advances directed at an adult using the Internet or other forms of online and electronic communications; it is the adult version of cyberbullying.

(ix) List three (3) forms of cyberbullying.

(3 marks)

ANSWER IN THIS BOX

Any Three of the following forms of cyberbullying:

- Sending mean-spirited or threatening messages to the victim
- Sending thousands of text messages to the victim's cell phone
- Impersonating the victim and sending inappropriate messages to others
- Stealing the victim's password and modifying his or her profile to include racist, homophobic, sexual, or other inappropriate data that offends others or attracts the attention of undesirable people
- Posting mean, personal, or false information about the victim in the cyberbully's blog or on a social networking page
- Creating a Web site or social networking profile whose purpose is to humiliate or threaten the victim
- Taking inappropriate photos of the victim and either posting them online or sending them to others via cell phone
- Sending inappropriate messages while playing interactive games that enable participants to communicate with one another

- (3) Write short notes on the following compliance laws: ADA508, FERPA, HIPAA, DMCA, GLBA. Your notes should include what the abbreviation/acronym stands for and their main features. (5 x 5 marks)

ANSWER IN THIS BOX

(a) ADA508

ADA stands for The Americans with Disabilities Act (ADA) 1973

Features

It prohibits discrimination on the basis of disability in employment, state and local government, public accommodations, commercial facilities, transportation and telecommunications in all federal agencies. It also applies to the United States Congress.

Section 508 requires all Federal agencies' electronic and information technology to be accessible to those with disabilities. Both members of the public and federal employees have the right to access this technology, such as computer hardware and software, websites, phone systems, and copiers.

Section 508 is an amendment to the above act which was done in 1998. It requires all federal agencies to make their electronic and information technology (EIT) accessible to people with disabilities. Both members of the public and federal employees have the right to access this technology, such as computer hardware and software, websites, phone systems, and copiers.

(b) FERPA

FERPA stands for Family Educational Rights and Privacy Act of 1974

Features

FERPA is a federal law that assigns certain rights to parents regarding their children's educational records. These rights transfer to the student once the student reaches the age of 18 or if he or she attends a school beyond the high school level. These rights include:

- the right to access educational records maintained by a school;
- the right to demand that educational records be disclosed only with student consent;
- the right to amend educational records; and
- the right to file complaints against a school for disclosing educational records in violation of FERPA

In summary, under FERPA, the presumption is that a student's records are private and not available to the public without the consent of the student. Penalties for violation of FERPA may include a cutoff of federal funding to the educational institution. Educational agencies and institutions may disclose education records to the parents of a dependent student, as defined in section 152 of the Internal Revenue Code of 1986, without the student's consent.

(c) HIPAA

HIPAA stands for Health Insurance Portability and Accountability Act of 1996.

Features

HIPAA was designed to improve the portability and continuity of health insurance coverage; to reduce fraud, waste, and abuse in health insurance and healthcare delivery; and to simplify the administration of health insurance. To these ends, HIPAA requires healthcare organizations to employ standardized electronic transactions, codes, and identifiers to enable them to fully digitize medical records, thus making it possible to exchange medical data over the Internet. Under the HIPAA provisions, healthcare providers must obtain written consent from patients prior to disclosing any information in their medical records. Thus, patients need to sign a HIPAA disclosure form each time they are treated at a hospital, and such a form must be kept on file with their primary care physician. In addition, healthcare providers are required to keep track of everyone who receives information from a patient's medical file. These actions must address the potential for unauthorized access to data by outside hackers as well as the more likely threat of internal misuse of data

(d) DMCA

DMCA stands for The Digital Millennium Copyright Act (DMCA).1998

The World Intellectual Property Organization (WIPO) Copyright Treaty is implemented in U.S. law through the Digital Millennium Copyright Act (DMCA). Some of the main features are:

It makes it illegal to circumvent a technical protection or develop and provide tools that allow others to access a technologically protected work.

It limits the liability of online service providers for copyright infringement by their subscribers or customers.

The Act permits the owner or lessee of a computer to make or authorize the making of a copy of a computer program in the course of maintaining or repairing that computer. The new copy cannot be used in any other manner and

must be destroyed immediately after the maintenance or repair is completed.

(e) GLBA

GLBA stands for Gramm–Leach–Bliley Act of 1999.

Features

Gramm–Leach–Bliley Act establishes guidelines for the collection and disclosure of personal financial information; requires financial institutions to document their data security plan; and encourages institutions to implement safeguards against pretexting

GLBA includes three key rules that affect personal privacy:

- **Financial Privacy Rule**—This rule established mandatory guidelines for the collection and disclosure of personal financial information by financial organizations.

- **Safeguards Rule**—This rule requires each financial institution to document a data security plan describing its preparation and plans for the ongoing protection of clients’ personal data.
- **Pretexting Rule**—This rule addresses attempts by people to access personal information without proper authority by such means as impersonating an account holder or phishing. GLBA encourages financial institutions to implement safeguards against pretexting.

(4) (i) Define intellectual property.

(2 marks)

ANSWER IN THIS BOX

Intellectual property is a term used to describe works **of the mind**—such as art, books, films, formulas, inventions, music, and processes—that are **distinct** and owned or created by a **single person** or **group**.

(ii) How is intellectual property protected?

(2 marks)

ANSWER IN THIS BOX

Intellectual property is protected through copyright, patent, trade secret, and trademark laws.

- (iii) Which is a form of protection for intellectual property that does not require any disclosures or filing of an application? (1 mark)

ANSWER IN THIS BOX

Trade secret

- (iv) What are the four (04) tests contained in the main body of the law that governs patents in the USA, that an invention must pass to be eligible for a patent? (5 marks)

ANSWER IN THIS BOX

- It must fall into one of five statutory classes of items that can be patented: (1) processes, (2) machines, (3) manufactures (such as objects made by humans or machines), (4) compositions of matter (such as chemical compounds), and (5) new uses in any of the previous four classes
- It must be useful
- It must be novel
- It must not be obvious to a person having ordinary skill in the same field.

- (v) Describe some of the key differences in the four legal schemes designed to protect intellectual property.

(10 marks)

ANSWER IN THIS BOX

A copyright is the exclusive right to distribute, display, perform, or reproduce an original work in copies; prepare derivative works based on the work; and grant these exclusive rights to others

Copyright law has proven to be extremely flexible in covering new technologies, including software, video games, multimedia works, and Web pages.

Evaluating the originality of a work can be difficult and can lead to litigation.

Copyrights provide less protection for software than patents

A patent enables an inventor to sue people who manufacture, use, or sell the invention without permission while the patent is in force. A patent prevents copying as well as independent creation (which is allowable under copyright law).

Unlike copyright infringement, for which monetary penalties are limited, if the court determines that a patent has been intentionally infringed, it can award up to triple the amount of the damages claimed by the patent holder.

To qualify as a trade secret, information must have economic value and must not be readily ascertainable. In addition, the trade secret's owner must have taken steps to maintain its secrecy. Trade secret laws do not prevent someone from using the same idea if it was developed independently or from analyzing an end product to figure out the trade secret behind it.

Trade secret law has three key advantages over the use of patents and copyrights in protecting companies from losing control of their intellectual property: (1) There are no time limitations on the protection of trade secrets, unlike patents and copyrights; (2) there is no need to file any application or otherwise disclose a trade secret to outsiders to gain protection; and (3) there is no risk that a trade secret might be found invalid in court.

A trademark is a logo, package design, phrase, sound, or word that enables a consumer to differentiate one company's products from another's. Web site owners who sell trademarked goods or services must take care to ensure they are not sued for trademark infringement.

(vi) What is plagiarism? Is plagiarism common outside academia too? If so, who are the other type of personnel commonly accused of it?

(5 marks)

ANSWER IN THIS BOX

To plagiarize is to steal someone's ideas or words and pass them off as one's own. Plagiarism is also common outside academia. Popular literary authors, playwrights, musicians, journalists, and even software developers have been accused of it.
