



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)

Academic Year 2020 – 3rd Year Examination – Semester 5

IT5105: Professional Issues in IT
Structured Question Paper

(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 **12 pages**.
- **Answer all questions.** All questions carry **equal** 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.
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Questions Answered

Indicate by a cross (×), (e.g.

×

) the numbers of the questions answered.

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

1)

- (a) List **six** (6) legal implications of computer monitoring at the workplace relating to e-mail and Internet surveillance that you are familiar with.

(06 Marks)

ANSWER IN THIS BOX

Employee's privacy
 Data Protection Act 1998 (UK)
 Data Protection Directives 95/46/EU
 The Regulation of Investigatory Powers Act 2000
 The Telecommunications Regulations 2000
 Human Rights Act 1998

- (b) Collection of personalized information could be very important for an organization. However, that data must be protected, and the collection has to be performed according to Data Protection policies. European Union Data Protection Directive (1998) is one such policy.

List six (06) European data privacy principles and briefly explain any **three** (03) of them.

(12 Marks)

Lawfulness, fairness and transparency

For processing of personal data to be lawful, specific grounds for the processing ('lawful basis') must be identified. There are six main options with additional conditions for processing some especially sensitive types of data. If no lawful basis applies then the processing is unlawful and in breach of this principle.

In general, fairness means that processing must be done in ways that people would reasonably expect and not in ways that have unjustified adverse effects on them.

Transparency is fundamentally linked to fairness. Transparent processing means being clear, open and honest with people from the start about who you are and how you process data. Informing individuals in easily accessible and understandable language is the key, whether the controller has a direct relationship with the individual or not.

Purpose limitation

To ensure that the reasons for processing are clear and open, and in line with the reasonable expectations of the individuals concerned, EU data protection law requires that the purposes for the processing be specified. This is fundamental to building public trust.

Data minimization

The data minimization principle requires entities to process only 'adequate, relevant and limited' personal data that is 'necessary'. EU data protection law does not define what 'adequate, relevant and limited' means but states that the assessment of what is 'necessary' must be done in relation to the purposes for processing.

Accuracy

EU data protection law requires that data be 'accurate', 'kept up to date' and 'erased or rectified' when inaccurate. GDPR does not define the word 'accurate' but, Based on the meaning of the word, it can be said that data is inaccurate when it is incorrect or misleading.

Storage limitation

EU data protection law does not set specific time limits for different types of data but requires that controllers and processors set limits based on the purposes of the processing.

Integrity and confidentiality

Controllers and processors must ensure that appropriate security measures are in place to prevent data from being accidentally or deliberately compromised.

Accountability

Accountability

The accountability principle requires controllers and processors to take responsibility for their processing activities and for how they comply with data protection principles. Having appropriate measures and records in place to demonstrate your compliance is key.

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

(7 marks)

	Column A	Column B
1	A guide of principles designed to help professionals conduct business honestly and with integrity	Code of ethics
2	This entity is responsible for building a strong ethical culture within the organization	Corporate Ethics Officer
3	This is a set of beliefs about right and wrong behaviour within a society	Ethics
4	Assesses an action in terms of its consequences or outcomes	Utilitarian Approach
5	A way of measuring, understanding, reporting and improving an organization's social and ethical performance	Social Audit
6	Making decisions focusing on how fairly actions and policies distribute benefits and burdens among people affected by the decision.	Fairness Approach
7	These are one's personal beliefs about right and wrong	Morals

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

25 marks

- 2) (a) a. The clauses given in Column A belong to the 4 sections of the British Computer Society (BCS) Code of Conduct. Write the name of the correct section against each clause in Column B.

(12 marks)

Column A	Column B
Only undertake to do work or provide a service that is within your professional competence	Professional Competence and Integrity
Have due regard for the legitimate (legal) rights of Third Parties.	Public Interest
Have due regard for public health, privacy, security and wellbeing of others and the environment.	Public Interest
Avoid injuring others, their property, reputation or employment by false or malicious or negligent action or inaction.	Professional Competence and Integrity
Accept professional responsibility for your work and for the work of colleagues who are defined in a given context as working under your supervision	Duty to Relevant Authority
Promote equal access to the benefits of IT and seek to promote the inclusion of all sectors in society wherever opportunities arise.	Public Interest
Conduct your professional activities without discrimination on the grounds of sex, sexual orientation, marital status, nationality, colour, race, ethnic origin, religion, age or disability, or of any other condition or requirement	Public Interest
NOT misrepresent or withhold information on the performance of products, systems or services (unless lawfully bound by a duty of confidentiality not to disclose such information), or take advantage of the lack of relevant knowledge or inexperience of others.	Duty to Relevant Authority

Explain the difference between Hackers and Crackers with reference to systems security.
(4 Marks)

(b)

ANSWER IN THIS BOX

Hackers

–Test limitations of systems out of intellectual curiosity

•Some smart and talented

Others inept; termed “lamers” or “script kiddies”

•Crackers

–Cracking is a form of hacking

–Clearly criminal activity

- (c) The terms in column A and sentences in column B are associated with security & privacy of personal data.

Match the suitable contents of a cell in Column A with the contents of a cell in Column B.

(4 Marks)

	Column A		Column B
1	Identity Theft	P	is unwanted software that try to get into your computing device, stealing your internet usage data and sensitive information.
2	Spyware	Q	attempt to obtain sensitive information or data, such as usernames, passwords and credit card details, by disguising oneself as a trustworthy entity in an electronic communication
3	phishing	R	was created primarily to modernize the flow of healthcare information, specify how personally identifiable information maintained by the healthcare and healthcare insurance industries should be protected from fraud and theft, and address limitations on healthcare insurance coverage.
4	HIPAA	S	the deliberate use of someone else's personal information, usually as a method to gain a financial advantage or obtain credit and other benefits in the other person's name, and perhaps to the other person's disadvantage or loss.

ANSWER IN THIS BOX

1-s

2-p

3-q

4-r

- (d) Explain the difference between Morals, Ethics & Law

(5 Marks)

ANSWER IN THIS BOX

Morals: One's personal beliefs about right and wrong (1 mark)

Ethics: Standards or codes of behaviour expected of an individual by a group to which an individual belongs (nation, organization, profession) (2 marks)

Law: System of rules that tells us what we can and cannot do, Laws are enforced by a set of institutions (the police, courts, law-making bodies) (2 marks)

Answer: (Morals) Ref 2 - Page 4, (ethics) Ref 2 - Page 3, (Law) Ref 2 - Page 5

25 marks

- 3) (a) **Commander** and **Debater** are two types of 'Personalities' belongs to the 'Analysts' category. List *two* (02) strengths and *two* (02) weaknesses of each personality.

(06 marks)

ANSWER IN THIS BOX

Commander - Strengths:

1. Bold, imaginative, strong-willed leaders, efficient, self-confident, and strategic thinkers.
- 2.

Commander - Weakness:

1. They can be arrogant, stubborn, dominant, ruthless, and poor emotion handlers.

2.

Debater - Strengths:

1. Smart and curious thinkers, knowledgeable, quick thinking, energetic, and charismatic.

2.

Debater - Weaknesses:

1. They can be very argumentative, insensitive, intolerant, difficult to focus on the practical matters.

2.

There can be more correct answers. 0.75 mark for each answer

- (b) Assume that you are a project manager. **Sudesh** is a software engineer hired to your team six months ago. During this last six months period, there were **several complaints** raised by the team members against Sudesh, which includes not respecting other team members, being dishonest, and not being punctual. As a result, top management has decided to put him into a **six-month probation** and applied **20% pay cut**. However, he is a **highly skilled programmer** and solve many critical programming issues in ongoing projects. Sudesh always finishes his daily allocated tasks earlier than the expected time. Therefore, you consider him as a very good asset for your team.

As the project manager, explain how would you give him a **constructive feedback** and motivate him to be an **honest** and **punctual** person as well as to be a **good team player**.

(08 marks)

ANSWER IN THIS BOX

Constructive feedback is providing useful comments and suggestions that contribute to a positive outcome, a better process or improved behaviours. It provides encouragement, support, corrective measures and direction to the person receiving it.

One way of giving a constructive feedback is to start with the good things that particular employee does well and slowly pointing out limitations. See things positively and encourage the employee about addressing those limitations and be a better person.

Feedback should not be delivered in a way that provokes hurt feelings, shame, defensiveness, resistance or a sense of failure. Constructive feedback needs to be specific, issue-focused and based on what is observable.

There can be many correct answers and based on the quality of the student's answer marks will be decided.

- (c) Recent COVID-19 situation has led many of the office work to conduct using online methods. List *three (03) advantages* and *three (03) disadvantages* of ‘work from home’ method.

(06 marks)

ANSWER IN THIS BOX

Advantages:

- There is no commute time or expense.
- Office space rentals and bills will be reduced
- Flexibility to take care of appointments and errands.
- There are fewer interruptions from meetings and chitchat.

Disadvantages:

- There is no physical separation between work and leisure time.
- It is easy to misread cues via electronic communications.
- You have to make the effort to get a change of scenery.
- Digital fatigue

There can be more correct answers. 1 mark for each point

- (d) As a result of the Industry 4.0 revolution, most of the **productions and services** would be **automated** using **intelligent machines**.
By thinking on the positive aspects, briefly explain what kind of **new job opportunities** would be created as a result of this change.

(05 marks)

ANSWER IN THIS BOX

Even though Industry 4.0 would cut-off jobs related to production lines, it may create several other job professions/fields such as software development, data science, cloud technologies, engineering and technician jobs related to robots and embedded systems, etc.

Further, as a result of this automation, production will increase and the prices of products may drop. Therefore, more sales and services jobs would be created.

There can be many correct answers and based on the quality of the student's answer marks will be decided.

25 marks

- 4) (a) Social networks such as Twitter and Facebook can be used to spread **false** or **misleading** information.

List **four** (04) actions that you would take to verify a particular piece of information is true or false.

(04 Marks)

ANSWER IN THIS BOX

- Check whether this information is coming from a reputable new agency, or does it cite reputable sources?
- Check that news / information with a fact checker.
- Check the number of followers and no of known contacts which follows that account
- Is the news shared using a fake account or does it belongs to a actual person?

There can be more correct answers. Each correct answer will receive 1 mark

- (b) **Cyberbullying** (the use of digital technology to threaten, menace, harass, or humiliate an individual or group) is becoming a major issue related to the Social Media.

State *four (04)* **actions** that you could take to **minimize** Cyberbullying?

(04 marks)

ANSWER IN THIS BOX

- Keep your profiles set to private; monitor and update privacy settings regularly
- Don't "friend" or follow anyone who isn't a friend
- Don't accept requests or messages from users you don't know
- Never share and protect your password and prevent others from gaining access to your profiles and private photos
- Educate yourself and others on the negative impact of cyberbullying
- Report the incident to the appropriate authorities.

There can be more correct answers. Each correct answer will receive 1.5 marks

- (c) Assume that you are developing a virtual reality environment (a virtual world) that can be used as a new social networking platform. A 3D humanoid virtual character will be assigned for each registered user account. Based on the user's inputs, this virtual character can interact with other virtual characters (which represent other users) in the virtual world. As the lead developer of this system, you would like to allow those virtual characters to simulate several real-world interactions in this virtual world, such as working, playing, partying, shopping, etc.

Briefly explain (03) **criminal/illegal activities** that can be taken place in this virtual world setting.

(06 Marks)

ANSWER IN THIS BOX

- Some activities can be clearly illegal, such usage of stolen credit cards
- Some may not be the same as in the real-life crime, such as virtual muggings and sex abuses. In real life scenario they can cause severe mental, physical pain and suffering.
- There are grey areas as well such as unfair operation of virtual casinos

There can be more correct answers. Each correct answer will receive 2 marks

(d.) List *three* (03) **best practises** of public speaking and presentation?

(06 arks)

ANSWER IN THIS BOX

- Make eye contact with the audience, open the flow of communication and convey interest, concern, warmth and credibility.
- Deliver an attention-grabbing Introduction. Be creative. Make sure to address the audience.
- Use evidence for the points you make.
- Speak loud enough and clear. Vary your volume, tone, pitch and pace in order to suit what you say.
- Use proper gestures, body language, and facial expressions
- Use visual supplementary documents such as handouts, posters, slides, videos, etc

There can be more correct answers. Each correct answer will receive 1.5 marks

(e) **paraphrasing** (express the meaning using different words) is considered as a key writing skill.

- i. Briefly explain why it is important
- ii. List *three* (03) methods that can be used for paraphrasing?

(05 marks)

ANSWER IN THIS BOX

i Paraphrasing helps to avoid the risk of plagiarism. Also, it demonstrates the author have a proper understanding of the source.

Explanation: 2 marks

ii

- Changing vocabulary by using synonyms.
- Changing word class (shift between verb/noun/adjectives).
- Changing word order.
- And more.

Each correct method: 1 mark

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25 marks
