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University of Ruhuna - Faculty of Technology

Bachelor of Information & Communication Technology Degree

Level 2 (Semester 1) Examination

November 2019

Course Unit: ICT2142, Professional Issues in IT

Time Allowed: 02 hours

Answer all four (04) questions

This question paper contains five (05) pages including this instruction page

IMPORTANT INSTRUCTIONS:

1. The medium of this examination is **English**.
2. This is a **Closed Book** examination.
3. This Examination consists of **four (04)** questions that are given equal marks.
4. You must **answer all four (04)** questions in this examination.

1.
 - a. Write short notes for following terms relates with theories/concepts of law applicable to IT Professionals and IT Industry.
 - i. Common Law
 - ii. Statute Law
 - iii. Incorporation
 - b. "Directors of a company are subject to two (02) main obligations, namely Domestic and Legal. They are answerable to the shareholders and to the law."
 - i. List down **two (02) Legal (External) obligations** of directors.
 - ii. Explain why "**Directors must act in good faith and for the benefit of the company**" using an example related to IT industry.
 - c.
 - i. List and briefly describe "**CSSL (Computer Society of Sri Lanka) Code of Ethics**".
 - ii. Explain the **importance of avoiding** the followings as a CSSL software engineering professional.
 - giving unrealistic estimates for any projects under your control
 - misinterpreting your skills and knowledge
2.
 - a. Briefly describe why "**Matrix management Organizational Model**" is more suitable than "**Bureaucratic Organizational Model**" to manage employees who are working on multiple projects in same time for a Project based, High Technology oriented software firm.
 - b.
 - i. Write down **two (02)** reasons that cause to terminate a software contract before it has been completed.
 - ii. Briefly describe "**Constructive Dismissal**" and give **one (01)** example.
 - c. "Techno Software Solution" is a fast-growing startup company started by group of Faculty of Technology students. Currently there is only one local innovative mobile application released. Due to the high popularity and the global demand for the product, the company is planning to release a global edition. According to the company estimates it requires more capital than they are having.

Assume that you are the leader of the feasibility study panel for raising the required capital. You have found that there are three possible finance sources are available and they are

- Grants
- Loans
- Equity Capitals

- i. List down **three (03)** possible reasons why company need capital to release a global edition.
- ii. Briefly describe the **three (03)** financial sources listed above.
- iii. Briefly describe **two (02)** issues to be considered when you are raising capital under each financial sources.

3. a. i. Briefly describe the term "Cost of Labor".

- ii. A company in Sri Lanka plans to start assembling of laptops. At the beginning the company recruited two technicians and few other essential employees. Technicians are fully responsible for assembling the laptops.

The detail of the salary of a technician is given below.

Total productive revenue generating hours per year: 1500 hours

Annual salary: Rs.600 000

EPF, ETF and other benefits: 10% of the annual salary

Direct costs and expected sales of different computer models are in Table 1

Model	Cost of components	Time spending by a Technician	Expected sales
Basic	Rs.40 000	10	200
Expert	Rs.60 000	20	100

Table 1

Company is having an annual overhead cost of Rs.1 800 000

Calculate the **cost of each laptop model** by using **Fixed Overhead** method.

Handwritten calculations:

$$\begin{array}{r} 600000 \\ 600000 \\ \hline 1200000 \end{array}$$

$$\begin{array}{r} 1200000 \\ 1500 \\ \hline 800 \end{array}$$

66

Handwritten calculations:

$$\begin{array}{r} 660000 \\ 1500 \\ \hline 440 \end{array}$$

b. i. Briefly describe the term "Time value of the money".

ii. Assume that you are going to start a photo copy center and plan to do the business for four (04) years. There are two (02) options that is buying photo copy machine or rent a photo copy machine. Find out **which option is the most profitable option** to you using **Discounted Cash Flow (DCF)** analysis.

All the required details are provided in following Table 2 in LKR without considering the inflation. The interest rate that the company pays on its borrowings is 5%. All the costs (except year 0) are subject to inflation, which is forecasted to be around 10% over the period.

	Year 0	Year 1	Year 2	Year 3
Buying a Photocopy Machine				
Purchase	3000	-	-	-
Services + Maintenance Cost	0	50	250	100
Revenue	300	500	600	700
Annual Cash Flow				
Discount Factor				
NPV of Annual Flow				
Total NPV				
Renting a the Photocopy Machine				
Annual Cost	500	500	500	500
Revenue	300	500	600	700
Annual Cash Flow				
Discount Factor				
NPV of Annual Flow				
Total NPV				

Table 2

State your opinion about the decision of selling the photo copy machine to Rs. 1600 at the end of 04th (this value is the final cash value after considering inflation).

Discount factors for periods up to five (05) years

Interest Rate %	Year 01	Year 02	Year 03	Year 04	Year 05
3	0.97	0.94	0.91	0.88	0.86
4	0.96	0.92	0.88	0.85	0.82
5	0.95	0.90	0.86	0.82	0.78
10	0.90	0.82	0.75	0.68	0.62

4. a. i. Write **one (01)** reason why is the current Sri Lankan legal framework on Computer Crimes Adequate?
- ii. Briefly describe “secondary infringement” and give **one (01)** example from IT industry.
- b. i. Write **five (05)** responsibilities out of 07 levels of responsibility in SFIA (Skills For Information Age) framework.
- ii. Briefly describe how you are going to work as a Trainee Software Engineer who was placed under **Level 01** of SFIA framework using **two (02)** generic attributes that characterize the levels of responsibility.
- c. Assume that you are a mobile application developer for Sri Lanka Elections Commission. You were required to develop a mobile application for the voters to vote for the presidential election 2019. It was developed in a hurry and it didn't go through proper testing. After it was released to general public, some complains were reported. The summary of the complains are given below.

- The application is collecting unnecessary personal data.
- Once user has entered data, they cannot change it at all.
- Once users have registered, users are getting lot of promotional contents of the candidates to their e mail and mobile phones.
- Some of the user entered data while registration is missing in the data base
- Part of the database is publicly available in the internet.
- Once a voter has voted the next voter can see the voters vote in their screen.

Other than the above listed issues you are sending the voters data to census department which was not the original purpose of your application and the candidates can see who has voted/not voted them with voters all personal data from their view as well.

Explain how above explained application is violating Data Protection using eight (08) data protection principles as a framework.

(Note: you have to use at least **five (05)** principles to answer the question.)

***** End of Paper *****