

ASSOCIATION OF ACCOUNTING TECHNICIANS OF SRI LANKA

LEVEL II EXAMINATION - JANUARY 2023

(202) INFORMATION SYSTEMS IN DIGITAL ENVIRONMENT

• **Instructions to candidates** (Please Read Carefully):

- (1) **Time Allowed:** Reading : 15 minutes.
Writing : 03 hours.

- (2) **All questions should be answered.**

- (3) **Answers should be in the medium applied for, in the booklets provided.**

- (4) **State clearly assumptions made by you, if any.**

- (5) **Action Verb Check List** with definitions is attached. Each question will begin with an **action verb** excluding OTQ's. Candidates should answer the questions based on the **definition** of the verb given in the Action Verb Check List.

- (6) 100 Marks.

26-02-2023

Morning

[08.45 – 12.00]

No. of Pages : 08

No. of Questions : 07

SECTION A

Objective Test Questions (OTQs)

(Total 25 marks)

Question 01

Select the most correct answer for question No. 1.1 to 1.10. Write the number of the selected answer in your answer booklet with the number assigned to the question.

1.1 Consider the following concepts:

(a) Cloud computing.

(b) Internet of things.

(c) Data centre.

(d) Blockchain.

Of the above, the correct concepts relating to driving forces of the Forth Industrial Revolution are:

(1) (a) and (c) only.

(2) (b) and (d) only.

(3) (a), (b) and (d) only.

(4) All of the above.

1.2 Which one of the following is **not** a spreadsheet software?

(1) Google sheets.

(2) Open office – Calc.

(3) Quark Xpress.

(4) iWork Numbers.

1.3 Consider the following characteristics in relation to Cloud Storage and Cloud-based Software:

- (a)** Easy to upgrade storage.
- (b)** Limited control of resources.
- (c)** Need for training in managing cloud services.
- (d)** Systems can be accessed from anywhere.

Of the above, the correct statement/s is/are:

- (1) **(a)** only.
- (2) **(a)** and **(d)** only.
- (3) **(a), (c)** and **(d)** only.
- (4) **(a), (b)** and **(d)** only.

1.4 Which of the following factor should **not** be considered when choosing a database for an organization?

- (1) Data inconsistency.
- (2) Safety and Security.
- (3) Structure of the data.
- (4) Speed and scalability.

1.5 What are the three (03) basic types of Management Information System (MIS) reports?

- (1) Periodic Reports, Real-time Reports and Annual Reports.
- (2) Periodic Reports, Real-time Reports and Scheduled Reports.
- (3) Scheduled Reports, On demand Reports and Real-time Reports.
- (4) Periodic Reports, Exception Reports and On Demand Reports.

1.6 Which one of the following is **not** an example for an ERP software vendor?

- (1) SAP.
- (2) QB.
- (3) PeopleSoft.
- (4) Oracle.

1.7 A supermarket needs to identify the customers those are most likely to make repeat purchases based on the sales data of the last quarter. Which one of the following business analytic technique will be the most useful for this purpose?

- (1) Prescriptive analytics.
- (2) Descriptive analytics.
- (3) Predictive analytics.
- (4) Corrective analytics.

1.8 A major strategy to reduce data centre power consumption is:

- (1) Virtualization.
- (2) Cyber security.
- (3) Fintech.
- (4) Data analysis.

1.9 Promoting public confidence in the authenticity, integrity and reliability of data messages, electronic documents, electronic records or other communications is one of the objectives of:

- (1) Right to the Information Act No 12 of 2016.
- (2) Payment and Settlement System Act No 28 of 2005.
- (3) Electronic Transactions (Amendment) Act No 25 of 2017.
- (4) Information and Communication Technology Act No 27 of 2003.

1.10 Which one of the following statements is **not** correct regarding “Engineering in the Cloud”?

- (1) Engineering in the Cloud is operated via a Virtual Engineering Platform (VEP) installed only on external servers of the organization.
- (2) Engineers can access the Virtual Engineering Platform (VEP) from anywhere in the world.
- (3) Engineering in the Cloud permits real-time communication between the engineering team and the production plants.
- (4) Engineering in the cloud is a place and time-independent process.

(02 marks each, 20 marks)

*State whether each of the following statements from 1.11 to 1.15 is **True** or **False**. Write the answer (True/False) in your answer booklet with the number assigned to the question.*

1.11 Employee details such as skill inventories, qualifications, salary and performance details can be considered as information.

1.12 Asymmetric Digital Subscriber Line (ADSL), High Speed Packet Access (HSPA), Long-Term Evolution (LTE) can be considered as internet connectivity options in Sri Lanka.

1.13 The technique for extraction of information from data warehouses is known as data scraping.

1.14 Computer Crime Act No 24 of 2007 helps to prevent the possession and use of unauthorized or counterfeit payment devices.

1.15 Cyber-physical systems control and monitor systems use advanced ICT applications for enhancing the collaboration among humans and machines.

(01 mark each, 05 marks)

(Total 25marks)

End of Section A

SECTION B

(Total 50 marks)

Question 02

In today's context, information technology and information systems play a major role in the financial sector. Also, there are different methods of improving employees' performance which provides relevant insight into productivity for all levels.

You are required to:

- (a) **State** two (02) roles that information technology and information systems can play in the financial sector. (02 marks)
 - (b) **Explain** two (02) ways how Personal Information Management (PIM) can be used to improve staff performance in organizations in the financial sector. (04 marks)
 - (c) **Explain** two(02) competitive advantages that an organization in the financial sector can obtain by using information systems. (04 marks)
- (Total 10 marks)

Question 03

Charith is an IT undergraduate and he is expecting to obtain internet connectivity to his residence since most of his studies are taking place via online platforms these days. As part of his course, he was assigned to do an individual assignment on Data Management & Database Management. He has identified that data management serves as an integral component of IT infrastructure that caters to diverse business needs.

You are required to:

- (a) (i) **Explain** what is meant by Database Management System (DBMS). (02 marks)
 - (ii) **List** two (02) examples for open source database management software. (02 marks)
 - (b) **Explain** two(02) functions that a DBMS performs to ensure data integrity and consistency of data. (04 marks)
 - (c) **Identify** two(02) factors that **Charith** should consider before selecting a suitable internet service provider. (02 marks)
- (Total 10 marks)

Question 04

Information is the life blood of any organization. Management uses such information to make better decisions and achieve goals along with the key directions identified through analytical tools.

You are required to:

- (a) **Differentiate** between Decision Support System (DSS) and Management Information System (MIS) based on the criteria provided in the table below:

Criteria	DSS	MIS
Parties that mostly use the system		
Nature of inputs		
Main objective		

(06 marks)

- (b) **Explain** the difference between “Business Intelligence” and “Business Analytics”. (04 marks)

(Total 10 marks)

Question 05

- (A) Due to COVID-19 Pandemic, students were exposed to digitalized technological equipments significantly. Though it brought number of benefits, it resulted significant negative impacts too. Parents of those students believe that, over usage of social media affects the privacy of their children.

You are required to:

- (a) **Explain** two(02) negative effects of over usage of social media networks by students.

(04 marks)

- (b) **Explain** what is meant by privacy and how social media affects the students’ privacy by using an appropriate example.

(03 marks)

- (B) Confidentiality, Integrity and Availability (CIA) are considered the three most important concepts within information security.

You are required to:

Explain the concepts of confidentiality and availability with reference to information security.

(03 marks)

(Total 10 marks)

Question 06

The fourth industrial revolution is characterized by future industry development trends to achieve more intelligent manufacturing processes, including reliance and construction of cyber-physical and the implementation & operation of smart industries that use advanced techniques and technologies.

- (a) **State** four(04) advantages to various stakeholders of using micropayments through mobile phone applications. (04 marks)
- (b) **Explain** two(02) crowd funding models observed in the present context, with an example for each. (06 marks)
- (Total 10 marks)

End of Section B

SECTION C

(Total 25 marks)

Question 07

Good Life is a traditional retail sector business organization which is planning to adopt an e-tailer business model. It currently has 03 outlets situated in Piliyandala, Colombo Fort, and Nugegoda. It is planning for a further expansion of outlets, with the objective of transforming **Good Life** into a super market chain available in 05 districts of the country.

Good Life presently has an employee base of over 50 where cashiers, storekeepers, store managers, sales assistants and security officers work in-store. With the expansion, it expects that the current employee base will expand over 300 where personnel such as area managers, procurement managers and sales representatives will work both in-store and on-the-go frequently. With this change, **Good Life** anticipates that it will have to provide its employees with computing devices that will facilitate both stationary and mobile work settings.

Currently **Good Life** has a few Transaction Processing Systems (TPS) that are used within the three store outlets for handling a few of the business operations, however the outlets maintain their data separately from each other. With the expansion within the country, **Good Life** is also planning to adopt an information system to streamline the business activities and enable a more centralized management. Along this line of thought, it intends to develop a Database Management System (DBMS) appropriate for the business operations of the organization. Although going digital is expected to bring benefits to the business, **Good Life** is also aware that it needs to be well equipped to face any security threats that the online environment may carry.

You are required to:

- (a) (i) **List** two(02) types of mobile computing devices that the employees of **Good Life** can use to fulfill their daily tasks. (02 marks)
- (ii) **Identify** the respective purpose for which each of the devices listed in above (a) (i) can be used. (02 marks)
- (b) **Identify** four(04) advantages that **Good Life** can obtain by moving their currently fragmented software applications to a single centralized database management system. (04 marks)
- (c) (i) **State** three(03) characteristics of a Transaction Processing System (TPS). (03 marks)
- (ii) **Identify** four(04) examples for possible TPS applications that **Good Life** can be used to enhance their business operations. (04 marks)
- (d) **State** four(04) instances where **Good Life** could apply data mining techniques to analyze their market. (04 marks)
- (e) **Explain** three(03) measures that **Good Life** can take in order to improve their cyber security to protect their data against the various threats posed by the online environment. (06 marks)
- (Total 25 marks)

End of Section C

ACTION VERBS CHECK LIST

Level of Competency	Description	Action Verbs	Verb Definitions
Knowledge (1)	Recall Facts and Basic Concepts.	Draw	Produce a picture or diagram.
		Relate	Establish logical or causal connections.
		State	Express details definitely or clearly.
		Identify	Recognize, establish or select after consideration.
		List	Write the connected items.

Level of Competency	Description	Action Verbs	Verb Definitions
Comprehension (2)	Explain & Elucidates Ideas and Information.	Recognize	Show validity or otherwise, using knowledge or contextual experience.
		Interpret	Translate into understandable or familiar terms.
		Describe	Write and communicate the key features.
		Explain	Make a clear description in detail using relevant facts.
		Define	Give the exact nature, scope or meaning.

Level of Competency	Description	Action Verbs	Verb Definitions
Application (3)	Use and Adapt Knowledge in New Situations.	Reconcile	Make consistent / compatible with another.
		Graph	Represent by graphs.
		Assess	Determine the value, nature, ability or quality.
		Solve	Find solutions through calculations and/or explanation.
		Prepare	Make or get ready for a particular purpose.
		Demonstrate	Prove or exhibit with examples.
		Calculate	Ascertain or reckon with mathematical computation.
		Apply	Put to practical use.

Level of Competency	Description	Action Verbs	Verb Definitions
Analysis (4)	Draw Connections Among Ideas and Solve Problems.	Communicate	Share or exchange information.
		Outline	Make a summary of significant features.
		Contrast	Examine to show differences.
		Compare	Examine to discover similarities.
		Discuss	Examine in detail by arguments.
		Differentiate	Constitute a difference that distinguishes something.
		Analyze	Examine in details to find the solution or outcome.