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SRI LANKA

Association of Accounting Technicians of Sri Lanka

Level II Examination – January 2026

Suggested Answers

(202) INFORMATION SYSTEMS IN DIGITAL ENVIRONMENT (ISD)

A publication of the Education and Training Division

Fifteen (15) Compulsory Questions (Total 25 Marks)	**SECTION - A**

Suggested Answers to Question One:

1.1	(2)	**1.6**	(2)	**1.11**	True
1.2	(4)	**1.7**	(1)	**1.12**	False
1.3	(2)	**1.8**	(4)	**1.13**	True
1.4	(2)	**1.9**	(2)	**1.14**	False
1.5	(3)	**1.10**	(2)	**1.15**	False

(02 marks each, 20 marks)   *(01 mark each, 05 marks)*

(Total 25 marks)

End of Section A

Suggested Answer for Question Two:

Chapter 1 Concepts of Information Systems and Impact of Information Systems

(a)

Data refers to raw, unprocessed facts or figures collected from daily activities by themselves do not convey meaning. In the hospital's Health Information System (HIS), examples of data include a patient's blood pressure reading of 140/90 mmHg or a lab test result such as a glucose level of 120 mg/dL. These values are recorded in the system but have limited meaning until they are interpreted.

On the other hand, Information is data that has been processed, organized, or interpreted to provide meaning and support decision-making. For the hospital, examples of information would be a dashboard showing that 30% of patients have high blood pressure or a summary report indicating trends in patient admissions and lab results over the last month. This processed data enables hospital management and doctors to make informed decisions about patient care, resource allocation, and operational planning.

In summary, data is the raw input, while information is the meaningful output that supports decision-making within the hospital's HIS. *(04 marks)*

(b)

An Information System (IS) is a structured combination of people, technology, processes, and data that work together to collect, process, store, and disseminate information to support decision-making, coordination, analysis, and control within an organisation. In essence, an information system transforms raw data into meaningful information that can be used by managers, employees, or other stakeholders to make informed decisions.

(03 marks)

(b)

- Calendar
- Reminder and task Information
- Expense and Financial Information
- Contract details
- Locational travel information
- Medical health records

(03 marks)
(Total 10 marks)

Suggested Answer for Question Three:

Chapter 02 Information Technology Infrastructure

(a)

IT infrastructure refers to the combination of **hardware, software, networks, and related facilities** that provide the foundation for an organisation's information technology environment. It includes physical components such as servers, computers, storage devices,

and networking equipment, as well as software platforms, operating systems, and cloud services that support business operations. IT infrastructure enables the collection, storage, processing, and distribution of data and information..

(02 marks)

(b)

Cloud computing can significantly enhance the **efficiency of an organisation** by providing scalable, flexible, and accessible IT resources.

1. **On-demand access to resources:** Cloud computing allows employees and managers to access applications, storage, and data from anywhere at any time using the internet. This reduces delays in operations and enables staff to work remotely or collaboratively without relying on local infrastructure, thereby improving overall operational efficiency.

2. **Cost and resource optimization:** Cloud services eliminate the need for heavy investment in physical servers, storage, and software licenses. Organizations can scale resources up or down based on demand, paying only for what they use. This ensures that IT resources are efficiently utilized, reducing wastage and operational costs.

3. **Automated updates and maintenance:** Cloud providers manage software updates, security patches, and system maintenance automatically. This reduces downtime, frees IT staff from routine maintenance tasks, and ensures that employees always work with the latest, most efficient systems. As a result, business processes run smoothly, and productivity is improved.

4. **Security:** Cloud providers maintain guaranteed security standards and better procedures in order to protect client's data saved in the cloud.

5. **Environmental Sustainability:** Cloud computing help organizations to reduce their carbon footprint by using large data centers.

6. **Disaster Recovery:** Cloud computing offers most efficient means for small, medium and even large enterprises to backup and restore their data and applications in a fast and reliable way.

(06 marks)

(c)

Software is important for improving a business's performance in an organization for several reasons:

1. Automation of business processes
2. Supports for decision-making and analysis
3. Enhances communication
4. Improves customer service
5. Facilitates data management
6. Improves efficiency
7. Cost reduction
8. Scalability
9. Performance monitoring
10. Competitive advantage

(02 marks)

Suggested Answer for Question Four:

Chapter 3 Information systems in Organizations

(a)(i)

1. **Marketing Information System (MkIS):** Marketing personnel use MkIS to report on the effectiveness of past and current campaigns launched and use the lessons learned from them to plan future marketing campaigns.

2. **Business Intelligence System (BIS**): BIS is used to make business decisions based on the collection, integration, and analysis of the collected data and information. This system is similar to EIS, but both lower-level managers and executives use it.

3. **Customer Relationship Management System (CRM):** A CRM system stores important information about customers, including previous sales, contact information, and sales opportunities. Marketing, customer service, sales, and business development personnel heavily use CRM.

4. **Sales Force Automation System (SFA):** A specialized component of a CRM system that automates many tasks that are involved in sales functions. It can include contact management, tracking and order management.

5. **Knowledge Management System (KMS):** Knowledge Management System refers to a system for managing knowledge in organizations for supporting creation, capture, storage and dissemination of information. The purpose of a KMS is to enable employees to gain access to the organization's sources of information and solutions.

6. **Financial Accounting System (FAS):** This area of MIS is specific to departments handling with finances and accounting, such as accounts payable and accounts receivable.

7. **Human Resource Management System (HRMS):** This system keeps track of employees' performance information and payroll data.

8. **Supply Chain Management System (SCM):** Manufacturing companies use SCM to track the flow of resources, raw materials, and services from purchase to all the way to shipping of the items.

(06 marks)

(ii) Two types of reports that can be retrieved from the above-mentioned systems:

1. Periodic/Scheduled reports
2. Exception/Ad-hoc reports
3. On demand/Real time reports

(02 marks)

(b)

E-commerce provides several advantages to customers of Masha Clothing:

1. **Convenience and accessibility:** Customers can browse products, place orders, and make payments online at any time and from any location.

2. **Access to a wider product range and information:**

3. E-commerce provides options for virtual auctions.

4. It provides readily available information.
5. E-commerce increases competition among organizations and as a result, organizations provides substantial discounts to customers.

(02 marks)
(Total 10 marks)

Suggested Answer for Question Five:

Chapter 4 Ethical Social and Legal Environment for Information Systems.

(a)

Cakes & Bakes can use various **social networking sites** to run promotions and engage with customers. Four examples include:

1. **Facebook**
2. **Instagram**
3. **LinkedIn**
4. **Twitter or X**

(03 marks)

(b)

- The ability to uncover industry trends in real-time.
- More comprehensive competitive analysis.
- Provide better customer service and customer satisfaction.
- Curate customers' content and stories in a snap.
- Customers' photos and success stories go hand in hand with higher engagement and conversion rates.
- Positioning power over competitors.
- Appeal to younger, social-savvy customers.
- It helps for recruitments.

(03 marks)

(c)

Cyber Bullying refers to the use of digital devices, social media, or online platforms by group or individuals to **intentionally harass, intimidate, or harm individuals**. It often involves sending threatening messages, spreading false information, or publicly shaming someone online, targeting their emotional or psychological well-being.

In contrast, **Hacking** involves **unauthorized access to computer systems, networks, or data** with the intention of stealing, altering, or damaging information. Hacking is primarily a technical breach targeting system security rather than personal harassment.

(04 marks)
(Total 10 marks)

Suggested Answer for Question Six:

Chapter 05 Technology Trends Impacting on Information Systems

(a)

1. **Technological advancements:** The rapid development of technologies such as artificial intelligence, the Internet of Things, and mobile digital platforms has enabled companies to optimize operations and enhance customer service. For the pharmaceutical chain, AI-powered demand forecasting helps predict which medicines will be needed in each branch, while IoT sensors monitor inventory in real time, reducing stockouts and wastage. These technologies make operations more efficient and accurate, aligning with modern business practices.

2. **Changing customer expectations:** Customers now expect fast, convenient, and seamless service experiences, including cashless and contactless transactions. The adoption of mobile payment solutions, such as digital wallets and QR codes, addresses these expectations, improving convenience and satisfaction. The company's decision reflects the influence of customer-driven forces of the 4th Industrial Revolution, where digital engagement and instant access to services have become critical to maintaining a competitive edge.

3. **Data driven decision making:** The abundance of data and advanced analytics tools drives organizations to make smarter, faster and more accurate business decisions-influencing the adoption of AI and IoT.

(03 marks)

(b)

- Pick Me / Uber (Ride-hailing apps): Replaced traditional taxi services with app- based platforms enabling real-time bookings, GPS tracking, and digital payments. Increased transparency and efficiency while introducing gig-based employment.

- ez Cash / mCash / FriMi (Mobile payment and FinTech apps): Transformed traditional cash transactions into digital and mobile-based payments, improving convenience and promoting financial inclusion.

- Daraz.lk / Kapruka (E-commerce platforms): Disrupted brick-and-mortar retail by enabling online shopping, home delivery, and wider product access.

- E-Channeling / Doc 990 (Telemedicine Platforms): Changed traditional healthcare by offering remote consultations and digital access to doctors and medical records.

- Airbnb / Booking.com (Tourism platforms): Replaced conventional travel agents and expanded access for small accommodation providers to global customers.

- Renewable energy and smart metering: Reduced reliance on centralized grid power and manual meter reading. Businesses and households can track. Consumption, optimize energy usage, reduce costs.
  (ex: Solar Microgrids, Smart Meters by Ceylon Electricity Board).

(04 marks)

(c)

1. High implementation costs.
2. Employee training and resistance
3. Data security and privacy risks
4. Changing business models
5. Data protection / hacking issues
6. Potential job losses
7. Skill challenges / Skill mismatches
8. Infrastructure challenges
9. Legal requirements of intellectual property

(03 marks)

(Total 10 marks)

End of Section B

Suggested Answer for Question Seven:

> *Chapter 02 Information Technology Infrastructure*
> *Chapter 3 Information systems in Organizations*
> *Chapter 4 Ethical Social and Legal Environment for Information Systems.*

(a)

1. **Centralized data management increase data consistency:** A DBMS allows all company data—covering procurement, production, inventory, finance, and human resources—to be stored in a single, centralized system. This eliminates duplication, ensures data consistency, and enables employees and managers to access accurate information in real time, improving coordination across departments.

2. **Improved decision-making through data retrieval and analysis:** With a DBMS, managers can generate reports, run queries, and use analytical tools to examine production trends, inventory levels, and financial performance. This ability to access real-time, organized information enables **data-driven decision-making**, allowing the company to respond quickly to operational issues or market demands.

3. **Enhanced data security and integrity:** A DBMS provides features such as access controls, user authentication, and data validation, ensuring that only authorized personnel can modify sensitive information. For LankaTech, this protects valuable business data, reduces errors, and maintains the accuracy of records, which is critical for maintaining efficient and reliable operations.

4. **Improved Data Sharing and Collaboration**: Authorized users across different departments can share and access data simultaneously through the Database Management System (DBMS). This promotes better coordination among production, sales, and management divisions.

5. **Data Independence:** Changes to data structures or formats can be made without affecting existing applications. This flexibility allows LankaTech easily as business needs evolve. Systems

6. **Reduced Application Development and Maintenance Time:** Common DBMS functionalities such as data access, reporting, and transaction handling-reduce programming complexity and speed up system development, helping LankaTech to introduce new business applications faster.

(06 marks)

(b)

1. Improved operational efficiency
2. Real-time data access and decision-making
3. Enhanced collaboration with customers and suppliers
4. Support for sustainability initiatives

5. Competitive advantage
6. Accurate forecasting
7. Departmental collaboration
8. Integrated information
9. Cost saving
10. Streamlined processes
11. Mobility
12. Customized reporting

(04 marks)

(c)

Data Mining is defined as extracting information from large data sets called data warehouses. In other words, data mining is a technique of mining knowledge to identify trends, and hidden relationships exist in data sets

1. Production Control.
2. Financial analysis.
3. Market Analysis and Management.
4. Healthcare.
5. Risk Management.
6. Biological data.
7. Customer Retention.
8. Manufacturing.
9. Fraud Detection.
10. Returns.

(05 marks)

(d)
1. Data visualization tools
2. Business intelligence reporting tools
3. Self-service analytic platforms
4. Statistical analysis tools
5. Big data platforms

(03 marks)

(e)
1. **Cost Reduction and Energy Saving:** Energy-efficient servers, computers, and smart sensors consume less electricity, reducing utility expenses. Additionally, using digital documentation instead of paper decreases printing and storage costs, leading to overall savings in operational expenditure.

2. **Enhanced corporate reputation and sustainability:** By adopting environmentally friendly IT practices, LankaTech demonstrates its commitment to sustainability and corporate social responsibility. This can improve the company's image among customers, suppliers, and stakeholders, potentially attracting eco-conscious clients and partners while contributing to environmental conservation.

3. **Investors and Consumers Confidence**: Investors and consumers are becoming more concerned about corporate environmental responsibility. Companies that actively measure and disclose their carbon footprint and sustainability performance gain trust and maintain higher market value

4. **Improved Resource Efficiency:** Practices such as virtualization and server consolidation increase hardware utilization, reducing the number of physical servers and cooling systems needed This leads to less power consumption, smaller data center footprints, and reduced equipment costs.

5. **Employees' and Stakeholders' Engagement:** Green IT fosters a culture of sustainability within the organization. Employees often take pride in being part of an eco-friendly workplace, improving morale and commitment to corporate sustainability goals.

(04 marks)

(f)

1. No on premises equipment to maintain like traditional businesses do.
2. Easy to upgrade storage.
3. There are a variety of cloud service providers to choose from, such as Amazon Elastic Block Store (Amazon EBS), Amazon Simple Storage Service (Amazon S3), and Amazon Elastic File System (Amazon EFS).
4. Provides disaster recovery facilities. (using different availability zones).
5. Cloud service providers provide management tools to assist.
6. Employees can access systems from anywhere.
7. Does not require hiring of additional tech employees or contractors for maintenance and for initial setup.
8. For a non-technical company, the cloud provider likely has better security and equipment reliability than they could provide in-house.
9. No need to concern about obsolete equipment or operating system upgrades.

(03 marks)

(Total 25 marks)

End of Section C

Notice:

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