



**Association of Accounting Technicians of Sri Lanka**

**Level II Examination - January 2022**

**Suggested Answers**

**(202) INFORMATION SYSTEMS IN DIGITAL ENVIRONMENT  
(ISD)**

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**A publication of the Education and Training Division**

Level II Examination - January 2022

(202) INFORMATION SYSTEMS IN DIGITAL ENVIRONMENT

SUGGESTED ANSWERS

Fifteen (15) Compulsory Questions  
(Total 25 Marks)

**SECTION - A**

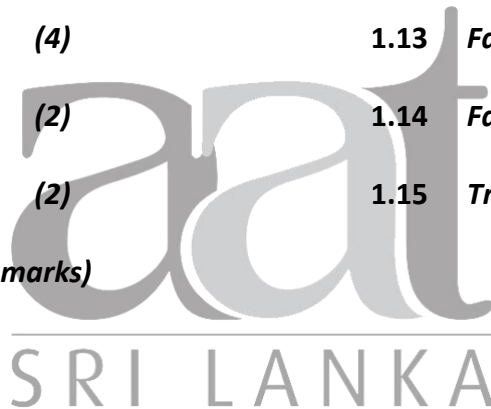
*Suggested Answers to Question One:*

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

(02 marks each, 20 marks)

(01 mark each, 05 marks)

(Total 25 marks)

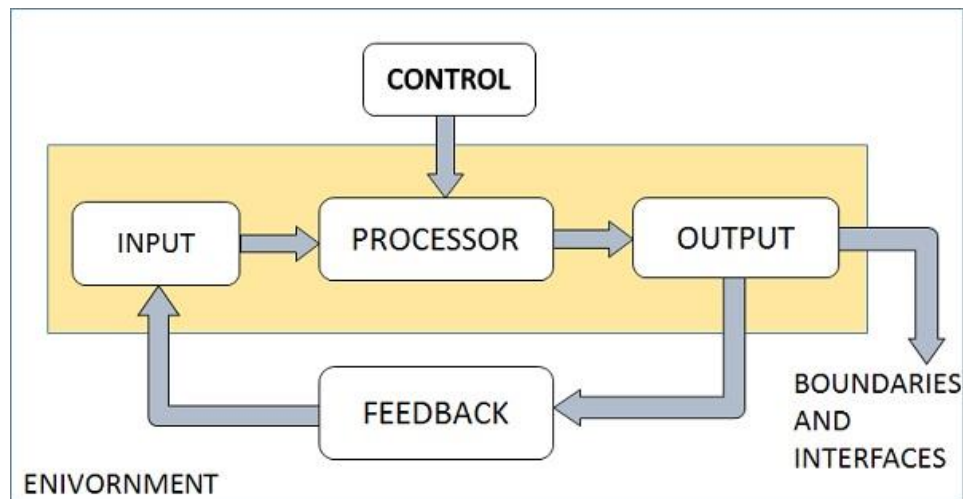


*End of Section A*

*Suggested Answer for Question Two:*

**Chapter 01 - Concepts of Information Systems and Impact of Information Systems**

(a)  
(i)



(05 marks)

(ii)

**1. Collect and preparation of data**

Process of capturing or collecting and transcription of raw data from within the organization or from its external environment/sources. For example, banks are using various types of application forms and they are issuing to account holders to collect data and entered. This process is called as Indirect input for processing. However, nowadays data is collected directly by using direct input devices (for example daily attendance through fingerprint machine).

**2. Processing data into information**

A process is a function which transforms data into information. This includes calculating comparing, sorting and analyzing to end users. A simple process would be adding up a number of items that is sold by a business by a variable such as the location of a store or the product or the time and date. More complex processes are the functions that perform calculations and can make assumptions about missing data in order to create information from the data available.

**3. Dissemination of information**

The communication or distribution of information to those that will be using it.

#### 4. Using and storing information for later use

Taking decisions, building plans, acting on the information received and store to use as when necessary. The storage of data should be done at the most detailed level possible. Regular backups and various summaries should be completed to avoid losing any important data due to errors. The backups should also be stored in a geographically different location to avoid any major disasters, which could impact on the original data storage.

#### 5. Monitoring the system

Receiving feedback to make sure that the system is working successfully.

**(03 marks)**

**(b)**

Business Process Re-engineering is the process of re-creating core business process/activities with the goal of improving product output, quality or reducing costs. Typically, it involves the analysis of company workflows, finding processes that are below a usual or normal level or inefficient and figuring out ways to eliminate or change them. Hence Business Process Re-engineering would result in fundamental rethinking and radical redesign of business processes to bring about dramatic improvements in performance.

**(02 marks)**

**(Total 10 marks)**

*Suggested Answer for Question Three:*

**Chapter 02 - Information Technology Infrastructure**

- (a)** Google Sheets
- (b)** Google Slides
- (c)** Google Docs
- (d)** MS-Access, MS SQL Server, MySQL
- (e)** Adobe InDesign, Microsoft Publisher, QuarkXPress, Serif-page plus Scribus
- (f)** Brave browser, Mozilla Firefox, Apple Safari, Internet Explorer
- (g)** Pixelmator, Inkscape, Adobe Fireworks, GIMP, Adobe Photoshop, Corel Draw
- (h)** MS-Teams, Zoom, Google Meet
- (i)** QuickBooks, Sage, AccPac

**(Total 10 marks)**

***Suggested Answer for Question Four:***

**Chapter 03 - Information Systems in Organizations**

<b>Information Characteristics</b>	<b>Strategic Level</b>	<b>Operational Level</b>
<b>Time period</b>	Information can be both historical (enabling management to learn from what has happened in the past) and forecast.	Operational information must be actual and based on historical information.
<b>Timeliness</b>	Timeliness of the information is not crucial as decisions are taken over a series of weeks or months. Significant changes, such as achievement of a competitor, will normally be reported quickly to the senior management.	Information must be immediately and readily available whenever requires for the task.
<b>Accuracy</b>	There is no demand for information to be completely accurate. Example: It will often be rounded to the nearest thousand.	Information must be very accurate. Exact figures are a must to take decisions at this level.
<b>Certainty</b>	By its very nature, future information is subject to uncertainty. Strategic planners must be capable of adjusting to the limitations of the data according to the scenarios.	Information will be highly precise or carry very little uncertainty. It relates to historical recording of actual events. E.g. sales figures of last few months.
<b>Completeness</b>	Strategic planners will often need to work with only partial information, using assumptions and estimate to try to build a complete model as much as possible.	The type of decisions to be made at this level is highly predictable, which enables the information needed to be specified and an appropriate. Information systems ensure complete set of information is available, when needed.

**(10 marks)**

*Suggested Answer for Question Five:*

**Chapter 03 - Information Systems in Organizations**

(a)

**Business Intelligence (BI)** refers to the tools, technologies, applications and practices used to collect, integrate, analyze and present an organization's raw data in order to create information which is useful to entire business, whereas **Business Analytics (BA)** refers to the iterative, methodical exploration of an organization's data, with an emphasis on statistical analysis. Business Analytics are heavily used by companies that are making data-driven decisions.

(04 marks)

(b)

(i)

1. Information Technology Enabled Services (ITES) BPO
2. Knowledge Process Outsourcing (KPO)
3. Legal Process Outsourcing (LPO)
4. Research Process Outsourcing (RPO)
5. Travel and Logistic Services
6. Analysis or rebranding of products and services
7. Social media marketing
8. Customer support
9. Accounting and finance functions
10. Human resources
11. Data entry



(03 marks)

(ii) **Disadvantages of BPO**

- 1) Security breaches
- 2) Overdependence on the BPO Company
- 3) Communication issues
- 4) Unanticipated / higher costs
- 5) Relationship issues
- 6) Loss of control
- 7) Issue on work life balance

(03 marks)  
(Total 10 marks)

***Suggested Answer for Question Six:***

**Chapter 04 - Ethical, Social and Legal Environment for Information Systems**

**(a)**

**(i)**

Green computing is the process of designing, manufacturing, engineering using computing and information technology resources and disposal of IT equipment in an environmentally healthy manner, while maintaining or improving overall performance.

Green computing can also be defined as the environmentally responsible and eco-friendly use of computers and their resources.

**(02 marks)**

**(ii)**

1. Increasing equipment power density
2. Increasing cooling requirements
3. Increasing energy costs
4. Restrictions on energy supply and access
5. Growing awareness about impact of IT on the environment
6. Rapid growth of the internet
7. Low server utilization rates

**(02 marks)**

**(b)**

Yes, can agree with above statement

**Justification**

Cloud computing is physically implemented on data centers around the world which consumes larger amounts of energy/ power. Higher usage of cloud computing contributes to greater demand of data center resources which include IT related equipment such as, server computers, networking devices at data centers, cooling systems, electricity resulting more carbon footprint and electronic waste. The heavy usage of energy/ power can be negated/ minimized by using renewable energy sources.

**(03 marks)**

**(c)**

1. Use energy efficient and long-lasting hardware
2. Dispose batteries with due care
3. Dispose LCD screens with due care
4. Dispose toner cartridges with due care
5. Give electronic items to an entity which re-cycles items
6. Encourage users to use refurbished hardware
7. Maintain computer power management by enabling hibernation and sleep modes to minimize waste
8. Use of electronic communication mechanisms to limit printing and recycling paper

**(03 marks)**

**(Total 10 marks)**

**End of Section B**

*Suggested Answer for Question Seven:*

(a)

**Chapter 4 - Ethical, Social and Legal Environment for Information Systems**

Lanka fertilizer can use information system with QR code based tracking or RFID based tracking for items.

**Alternative answer:**

Lanka Fertilizer can implement a computer based system to perform its functions electronically. Collection of accepted order details and payments from customers can be done by setting up a dynamic e-Commerce web site, customer/delivery partner/business related communication can be done using emails/SMS/instant messaging platforms, storage of collected data from all sources can be stored electronically in a centralized/unified database for easy access by all authorized parties, a tailored ERP can be used for efficient access and tracking of real-time data/information and all such electronic functions will help to minimize paper usage throughout the organization and enable only required documents to be printed when necessary.

(03 marks)

(b)

**Chapter 3 - Information Systems in Organizations**

**1. To ensure brand visibility for their products**

This helps the consumers to understand, recall and become comfortable with the company's brands and products.

**2. Ease of access for customers**

When customers search the products and they intend to purchase the company's products, there is a high profitability to select the products and place orders for company's products through website.

**3. Online presence 24/7**

Having a website means customers are always able to find the company anytime, anywhere. Even outside of business hours, website continues to find and secure new customers.

**4. Information exchange**

A website provides a quick and easy way of communicating information between buyers and sellers.



### 5. **Credibility**

In today's modern world, it is an expectation for any reputable company to have some kind of online presence. For that the company can use their website.

### 6. **Minimize costs**

The company can use the website to sell goods and services directly to customers. Using the website, the company can reduce some overhead costs such as utilities, staff costs, etc.

### 7. **Market expansion**

As website is accessible to anybody in the world the ability to break through geographical barriers has been easier. Anyone from any country will be able to find the company and such person will be a potential customer of the company.

### 8. **Customer service online**

Website provides an easier way to handle customer service offering answers to FAQs. The company can reduce customer service cost and save time also.

### 9. **Facilitates digital marketing**

Digital marketing/ advertising activities can be implemented on web platform in an effective manner using multimedia. Further implementing a website is a good platform for the business to showcase their corporate social responsibility (CSR) initiatives.

(04 marks)

(c)

## **Chapter 2 - Information Technology Infrastructure**

### 1. **Hardware Platform**

Personal computers, server computers, networking equipments can be maintained at manufacturing plants and distribution centers to provide required computer facilities.

### 2. **Application Software / Operating System Software Platform**

Suitable operating system can be implemented to run on computers with necessary application software to improve office automation at all different centers.

### 3. **Custom Built Software / Bespoke Application**

Customized software solution with user friendly interface can be introduced to enter / retrieve customer details, product details, payments, delivery details and staff related information.

### 4. **WAN Network / Intranet / Extranet**

A wired or wireless (3G/4G) network with a higher bandwidth connects all manufacturing plants and distribution centers to setup real-time communication and exchange of information.

**5. Database Management System**

Network connected to a centralized database, which is then connected to customize ERP can be implemented, so that collected data/information can be maintained centrally.

**6. E-Commerce Website**

Website can be maintained with available cross platforms, so that customers can remotely access/browse for products and place orders.

**7. Customized Enterprise Resource Planning (ERP) Software**

This can be implemented to connect different functional information systems in different departments of the organization.

**8. Internet Platforms**

This is another part of companies' general networking infrastructure which is supported by necessary hardware and software to interconnect.

**9. Consulting and System Integration System**

This includes processes which ensure the new infrastructure to align smoothly with the existing system and required functions. If the company has a lack of knowledgeable staff, it can be taken from consulting organizations. Completely replacing the new system is expensive than integrating older system to be integrated into new infrastructure.

**10. Tablets, mobile devices to be used by employees to track items.**

**11. Cloud infrastructure to setup the dashboards.**

**12. Operating systems platforms: This provides mostly windows based operating system.**

**(08 marks)**

**(d)**

**Chapter 03 - Information Systems in Organizations**

**1 Ease of access for the users**

Using a mobile app is quicker, convenient and easier than accessing typical website. If the company has a mobile app, customer can use the anytime anywhere across the world.

**2 Provide more value to customers**

The most of business owners now rely on technology to initiate and complete transactions with customers. Mobile apps are one of the major elements of modern technology that are consistently changing how consumers shop and satisfy their needs.

### **3 Generate additional sales**

Items can be tracked using a mobile app to ensure easy traceability resulting more sales.

### **4 Interactive Engagement**

Mobile apps have their own interfaces that allow users to experience two-way immersive experience. They can simply share product images / videos / contents with others and show what they have bought via easy sharing and one-click buy / order, will enhance conversation with the customers and revenue.

### **5 Tracing & Tracking data**

Valuable data can be gathered from apps concerning use, activity, user preferences and purchasing habits.

### **6 Improve customer loyalty**

A high customer retention rate is a major component of almost every successful business. It is often possible to maintain a high retention rate by offering great value to customers and ensuring that they are satisfied.

### **7 Communication**

It is easier to interact with customers and prospects with an app including the immediacy of being able to attract their attention on business updates and maybe prompt action through techniques like push notifications.

### **8 Staff interaction**

Information can be disseminated quickly and easily among staff either with those who are accessing the internal company portal or people working in remote locations through their mobile devices.

### **9 Productivity**

App-based interactions can streamline communications with staff and outside service providers / contractors which helps to reduce labour intensive paper-based reporting.

### **10 Ability to use location based services on Apps**

Location-based services (LBS) allow customers to access services that are based on the location of their mobile device based on device's geographical location (GPS). LBS applications provide services and information that are most relevant to the user at that location.

### **11 Broaden the market coverage**

This enables to gain a competitive edge towards the company's products.

**(04 marks)**

(e)

**Chapter 04 - Ethical, Social and Legal Environment for Information Systems**

**1 Promote content**

Social media platforms can be used to launch new products and services promote events or advertise promotions in an interactive way to attract potential customers, proving business expertise and later divert followers into website visitors. It is possible to make marketing promotions in social media and this helps to achieve the growth in business. Also, the entity can do a brainstorming on how they can personalize the whole concept of offering discounts and promo codes to make customers feel special. If the company can always promote their products through social media, it will be prominent in social media.

**2 Reach wider audience**

As people start liking, commenting on and sharing social posts / content related to product / service offered by business, organization will get exposed to new audiences and their friends and followers. Also, as people share content within their circle, it further spreads across the internet, potentially getting thousands or even millions of views and shares.

**3 Better customer / audience engagement**

Social media allows interacting with customers and audience directly and giving them the opportunity to interact directly with the business. Unlike in traditional media, which offers only one-way communication, social media is a two-way in an interactive mode. Further the company can upload better images, videos and visual content to have more effective engagement with potential buyers.

**4 Better customer service and support**

There is a trend that people expect / prefer products to be available on social media and seek out their social accounts for customer service. Business can build better bond with customers and handle inquiries of potential customers in an efficient, user-friendly manner.

**5 Learn more about customers**

Social media generates a huge amount of data about customers in real-time. Efficient use of such information to make smarter business decisions can help to tailor social media marketing strategy to approach real audience. All of the major social media platforms offer analytics that provide demographic information about the people interacting with social media account.

**6 Know / Monitor competition**

It is important to know and monitor competitors. Monitoring the competition on social media provides insight of what services / product offer, promotions used by competitors and use that information to reach out to address, winning new customers in the process.

### 7 Social Media Advertising

Social media advertising is an inexpensive way to promote business and distribute content online. They also offer powerful targeting options so that, businesses can target and reach the right audience to increase sales at right times.

### 8 Reporting and analytics

Social media tracking and analytics tools can be used to monitor the impact of social media activities. Tools like Google Analytics can be used to track website traffic generated from social media, conversions, email sign-ups, and ROI for paid social media campaigns.

### 9 Increase brand awareness

With over half of the world's population using social media, makes it a natural place to reach new and highly targeted potential customers in the today's digital world.

### 10 Share creative visual content for better engagement

The company can upload better images, videos and visual content on plant growing to have more effective engagement with potential buyers.



(06 marks)  
(Total 25 marks)

*End of Section C*

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