



**Association of Accounting Technicians of Sri Lanka**

**Level II Examination - January 2021**

**Suggested Answers**

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

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(202) INFORMATION SYSTEMS IN DIGITAL ENVIRONMENT

SUGGESTED ANSWERS

Fifteen (15) Compulsory Questions  
(Total 25 Marks)

SECTION - A

*Suggested Answers to Question One:*

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

(01 mark each, 05 marks)

The logo for the Association of Accounting Technicians of Sri Lanka (AAT Sri Lanka) features the lowercase letters 'aat' in a stylized, overlapping font. Below this, the words 'SRI LANKA' are written in a clean, uppercase, sans-serif font.

(Total 25 marks)

End of Section A

*Suggested Answer for Question Two:*

[a]

***Chapter 1- Concepts of Information Systems and Impact of Information Systems***

**Characteristics of quality information**

1. Understandable
2. Relevant
3. Complete
4. Availability
5. Reliable
6. Concise
7. Timely
8. Cost Effective

(02 marks)

[b]

***Chapter 1- Concepts of Information Systems and Impact of Information Systems  
Chapter 5- Technology Trends Impacting on Information Systems***

**Methods as to how Information Technology is used during pandemic.**

**1. Work remotely / Work From Home (WFH)**

The COVID-19 pandemic will likely have implications for how many of us are employed to do distance work. It has shown that more employees are able to work from home effectively using the technology. The organizations facilitate their employees to work from home investing more in technology and communication tools.

**2. Physical meetings were converted into virtual meetings**

Everybody had to convert their meetings as virtual meetings and organizations used Zoom, Teams, Google meeting etc...to conduct the meetings and further seminars and discussions were also held using those apps.

**3. On-line education**

With COVID-19 pandemic all the schools had to close down and it impacted children's education. As a result, government and other private schools are using on-line education through LMS as well as Zoom, Ms. Teams, etc...

#### 4. Increase in on-line purchases

With COVID-19 pandemic, country was locked down and people could not go to markets/shops to buy items required by them. Therefore, people moved to online transactions and purchased the items through online.

#### 5. Increase in online transactions with banks

People did their bank transactions at home without going to banks. All the banks provided facilities to their customers to perform transactions while they were staying at home safely.

(06 marks)

[c]

### ***Chapter 1- Concepts of Information Systems and Impact of Information Systems***

Information system (IS) is a formalized set of procedures designed to convert data from both internal and external sources into information, which is then suitable for decision making and planning. IS are enormously varied based on the application.

They range from simple manual systems to complex computer based systems. What they share in common is that they are planned to fit a specific set of information needs for an organization.

#### **Alternate Answer**

An information system is a formal organizational system designed to collect, process, store, and distribute information.

(02 marks)

(Total 10 marks)

### ***Suggested Answer for Question Three:***

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

#### **[a] Applications**

1. Microsoft Teams
2. Zoom
3. Google Hangouts Meet

#### ***Assumptions***

1. *Smartphone is equipped with necessary system requirements to run applications*
2. *The educational institute is using the applications to videoconference/ delivers lectures*

(02 marks)

**[b] Services required to get internet connectivity**

1. 3G / 4G data connection
2. Mobile broadband connection
3. ADSL + Wi-Fi
4. Fibre + Wi-Fi ( Assume the phone has Wi-Fi connectivity)
5. High Speed Packet Access (HSPA)

**(02 marks)**

**[c] Devices**

1. Desktop
2. Laptop Computer
3. I-Pad
- 4.

**(02 marks)**

**[d] Yes, Can agree with the statement.**

It is not necessary to purchase a separate USB flash drive, because he can use his smart phones secure digital (SD) storage (Micro SD) to store lesson details. Since these are available in larger capacities (8GB, 16GB and more) and smaller size than USB makes it more convenient to use. In addition to that if the student subscribes to a cloud storage account such as Google drive or drop box, the storage can be sued and accessed from any computer.

**(04 marks)**

**(Total 10 marks)**

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

**[a]**

***Chapter 3- Information Systems in Organizations***

1. **Transaction Processing Systems** – To process orders for tea in bulk or in tea packets, payments for orders, stock control etc.
2. **Management Information Systems** – To provide middle level managers the view to plan the organization according to policies and directives of top management. Periodic reports on tea sales, expenditure on machinery, raw materials etc.
3. **Decision Support Systems** – To assist in management decision making on tasks such as optimum cost of packages
4. **Business Expert Systems** – To direct anomalies in transactions, attendance marking of employee using facial recognition etc.

5. **Executive Information System** – To support top management on decisions such as new markets and return on strategic investments.
6. **Enterprise Resource Planning Systems** – To integrate systems that run across verticals and horizontal in the organization with modules for different functions.
7. **Office Automation Systems** – To automate day to day tasks in the front office such as approvals, customer complaints etc.
8. **Human Resource Information System (HRIS)** - HRIS helps to process of producing, organizing, storing and distributing employee related information across the organization which helps decision makers at various levels. HRIS handle daily human resources activities, related issues and functions responsible for attracting, developing and maintaining the employees.

(06 marks)

**[b] Advantages of BPO**

1. Lower costs
2. Flexibility
3. Competitive advantages
4. Higher quality
5. Higher efficiency / Better performance
6. BPO offers business to access innovative technological resources that they might not otherwise have exposure
7. Time saving
8. Can compete with large organizations
9. Allows to focus on core business functions
10. Provides opportunities for global expansion

(04 marks)

(Total 10 marks)

***Suggested Answer for Question Five:***

**[a]**

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

**[i]** No. Cannot agree.

Unsolicited/ Spam email is an email sent to one's email address without the user's explicit consent to receive them, usually sent out for advertising purposes. However, even without hacking into the email account of the user, it is possible to get spam email if someone else shares his email address

(03 marks)

**[ii] Steps can be taken to ensure reduce the receipt of unsolicited emails**

1. Block spam email addresses.
2. Use a spam filters.
3. Unsubscribe from mailing lists.
4. Do not reveal email address to unknown parties.
5. Use a secondary/ different email addresses depending on the purpose or nature of communication
6. Never display email address on public applications such as social media and social networking platforms.

**(04 marks)**

**[b]**

1. Report the situation to the social networking platform with all relevant evidence to prove the situation.
2. Further, lodge a complaint to the Sri Lanka Computer Emergency Response Team (SLCERT) with evidence to take necessary action to remove the profile.
3. Inform all friends in impersonate profile about the situation and not to respond to anything comes from fake account.

**(03 marks)**

**(Total 10 marks)**



*Suggested Answer for Question Six:*

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

**[a] Reasons to adopt green computing practices**

**1. Rapid Growth of the Internet**

There has been a rapid adoption of Internet based communications and media, computerization of business processes and applications, use of cyber physical systems in industries and disaster recovery. All these have led to the rapid growth in the size and number of data centers, devices in use. Contribution on an individual level is too rapidly increasing by video and music downloads, on-line gaming, social networking and VoIP usage.

**2. Increase in equipment power density**

Although advanced server CPUs have in some cases enabled higher performance with less power consumption per CPU, overall server power consumption has continued to increase as more servers are installed with higher performance power hungry processors with more memory capacity. As more servers are installed, they require more floor space.

**3. Increasing cooling requirements**

The increase in data center usage requires sophisticated cooling systems which consume more power and will continue to increase as data center server densities increase.

**4. Increasing energy costs**

Data center expenditures for power and cooling can exceed that for equipment over the useful life of a server. With increasing number of data centers and servers, the cost of energy for data center power and cooling will increase continuously.

**5. Restrictions on energy supply and access**

In some crowded urban areas utility power feeds are reaching their maximum capacities and electricity is not available for new data centers at any price.

**6. Low device or server utilization rates**

Devices and data center efficiency is a major problem in terms of energy use. Low device utilization means companies are overpaying for energy, maintenance, operations support, while only using a small percentage of computing capacity.



**7. Growing awareness about impact of IT on the environment**

Carbon emissions are directly proportional to energy usage and there is a large carbon footprint contribution from IT related products and manufacturing.

**8. It saves money**

PC power management software can cut energy costs. For many organizations, this can mean a 5%-15% reduction in overall, organization-wide energy consumption.

**9. It's the right thing to do**

Fifteen PCs can generate as much carbon emissions as a mid-size car each year. Implementing effective PC power management strategies provides a way for business to do its part in helping the environment.

**10. Sustained growth requires sustainable operations**

The average PC consumes 588 kilowatt-hours of electricity per year. Putting a computer in sleep mode during inactive times can cut energy use. As your company grows and as demands on your IT and PC networks increase, getting control over energy use will become an important advantage.

**11. Attract and retain customer**

For large enterprises, this can literally mean savings of thousands of tons carbon each year, simply by managing PC power consumption.

**12. Inspire employees**

Employees feel a deep sense of pride working in organizations that do their part for the environment.

**13. Improved reputation and brand value**

Investing in a strong sustainability program (which can be led with Green IT) and communicating the value to customers and stakeholders can increase for reputation and brand.

**14. Cost Savings**

Every year, enterprises waste nearly \$4 billion powering devices that are not in use. These expenses and the excess carbon emissions could be reduced through the introduction of power management.

**15. Energy efficient IT is high performance IT**

**(06 marks)**

**[b]**

The internet of things (IoT), is a system of interrelated computing devices, mechanical and digital machines, objects, people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network with minimum human intervention.

An IoT system consists of web-enabled smart devices that use embedded systems, such as processors, sensors and communication hardware, to collect, process, send and act on data that collects from their environments. IoT devices share the sensor data they collect by connecting to an IoT gateway or other edge device where data is analyzed locally or sent to the cloud to be analyzed. These devices are capable of communicate with other related devices and act on the information they get from one another. The devices do most of the work with or without human intervention. IoT can also make use of artificial intelligence (AI) and machine learning to aid in making data collecting processes easier and dynamic. The Internet of Things is making the fabric of the world around us smarter and more responsive, merging the digital and physical universes.

**(04 marks)**

**(Total 10 marks)**

***End of Section B***

**cat**  
**SRI LANKA**

*Suggested Answer for Question Seven:*

[a]

***Chapter 3- Information Systems in Organizations***

The sales force can be provided with smart phones or tablets with internet connectivity and the development of a mobile app to digitize paper-based invoicing. This can be expanded to trade partners through the distribution chain to help in the integrity of their data. Further, the time taken to compile sales updates will be dramatically reduced and real time reporting is possible. For this purpose, the company can use Enterprise Resource Planning Software (ERP), business software that integrates all business processes in a business from traceability of raw materials, management and optimization of inventory, production planning and scheduling, to financial controls and customer relationship management.

ERP systems enable businesses to have greater insight and visibility into their supply chain operations. Access to this key information allows them to make critical business decisions and to maintain a competitive edge in the industry.

(04 marks)

[b]

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

**1. Computer Hardware Platforms**

This is the physical technology that works with information. Hardware can be as small as a smartphone that fits in a pocket or as large as a supercomputer that fills a building. Hardware also includes the peripheral devices that work with computers, servers, devices, data centers, switches, hubs and routers. Mainframes are used to reliably and securely handle huge volumes of transactions, for analyzing very large quantities of data and for handling large workloads in cloud computing centers.

**2. Computer software / Operating System Platforms & Enterprise Software Applications**

This is the immediate layer on hardware and comprise of both system software and application software. These provide a platform to drive hardware to fulfill required business functions. This includes operating systems, such as Windows, macOS and mobile operating systems like Android, iOS, which manages the hardware's operation. Application software is designed for specific tasks, such as handling a spreadsheet, creating a document, or ERPs.

### 3. **Networking/ Telecommunications Platforms**

This component connects the hardware together to form a network. Connections can be through wires, such as Ethernet cables or fiber optics, or wireless, such as through Wi-Fi. A network can be designed to tie together computers in a small area, such as an office or a building, through a local area network (LAN). If computers are more dispersed, the network is called a wide area network (WAN), where devices are connected through public network like internet with the help of VPN (Virtual Private Network) facility to add protection to data circulating on the network.

### 4. **Databases and data warehouses**

A database is a place where data is collected and from which it can be retrieved by querying it using one or more specific criteria. A data warehouse contains all of the data in different forms that an organization needs. The leading database software providers are Oracle, Microsoft (SQL Server) and Sybase (Adaptive Server Enterprise). Databases and data warehouses carry large volumes of data that can be used for business intelligence (BI) and analytics (BA).

### 5. **Internet Platforms**

Internet platform is another part of company's general networking infrastructure, which is supported by necessary hardware and software platforms. They include hardware, software and management services to support company's websites and other web related facilities such as, web hosting services, routers and cabling or wireless equipment.

### 6. **Consulting and Systems Integration Services**

Many companies face difficulties in finding necessary staff, skills, budgets, or the necessary experience to set up and maintain its entire IT infrastructure. Implementing a new infrastructure requires substantial among changes in existing business processes and procedures, training and education and software integration. Leading consulting organizations provide this expertise to clients as a service.

### 7. **Human resources and procedures**

Most important, component of information systems is the human element. The people that are needed to run the system and the procedures they follow so that the knowledge resides in the databases and data warehouses can be turned into learning that can interpret what has happened in the past and to predict the future.

**(08 marks)**

[c]

***Chapter 3- Information Systems in Organizations***

**Benefits of using Business Intelligence to the business**

1. Faster and accurate reporting, analysis or planning
2. Identify market trends and patterns
3. Identify business problems that need to be addressed
4. Increasing operational efficiency
5. Better business decisions
6. Identifying market trends and patterns
7. Improved customer satisfaction
8. Increased competitive advantages over competitors
9. Reduced costs
10. Finding ways for new revenues

(04 marks)

[d]

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

**Advantages of maintaining an active social media presence**

1. Increase brand awareness / provide new product updates directly to consumers
2. Have competitions to engage consumers
3. To connect with customers and potential customers
4. Can focus large number of customer base
5. To increase sales
6. Partner with influencers
7. Spreads rapidly by being frequently shared by followers
8. The ability to uncover industry trends in real –time
9. More comprehensive competitive analysis
10. Provide better customer service and customer satisfaction
11. Curate customer content and stories in a snap
12. Customer photos and success stories go hand in hand with higher engagement and conversion rates
13. Customer and audience engagement / advertise products easily
14. Better customer service and customer support on social media / permit customers to post complaints as messages
15. Positioning power over competitors
16. Appeal to younger, social-savvy customers
17. Recruitment

(04 marks)

[e]

**Chapter 5 – Technology Trends Impacting on Information Systems**

- **Big Data**

Big Data is a collection of data that is huge in volume; continue to growing exponentially with time. It is a data with so large size and complexity that none of traditional data management tools can store it or process it efficiently. Organizations collect data from a variety of sources, including business transactions, smart (IoT) devices, industrial equipment, videos, social media and more. With the growth in the IoT, data streams in to businesses at an unprecedented speed and must be handled in a timely manner. RFID tags, sensors and smart meters are driving the need to deal with these data in near-real time. In Big Data, data is available in all types of formats, from structured, numeric data in traditional databases to unstructured text documents, emails, video files, audio files, stock data and financial transactions.

- **Data visualisation**

Data visualization is the graphical representation of information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns in data. This allows to identify changes quickly and keep our eyes on the information / changes.

(05 marks)

(Total 25 marks)

**End of Section C**

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