Answer All Questions   Time: 03 Hours

Q1. Read the following Case Study and answer the questions given below.

Organisations can improve their efficiency by using computer technology. Government institutions handling especially a large volume of data can use technology effectively to make things easy for people. However, bureaucracy, inefficiency and corruption coupled with lack of IT skilled top officials make things worse and the institutions lose valuable data within a few seconds creating serious issues in government service.

The Department of Motor Traffic (DMT) faced a similar crisis recently and the computer system in the department was paralysed for nearly one week bringing all work in the department to a standstill. Fortunately the data in the database had not been deleted as reported by some media, sources said. After the crisis officers accused one another in the media and this demonstrated the lack of coordination and bureaucracy that prevailed in the department. According to media reports the IT personnel in the department attempted to blame the Commissioner and the Assistant Commissioner (IT) for it. The Sunday Observer learns that this was a result of many issues by various officials including IT personnel.

The DMT case is an example how poorly the government institutions use computer technology and the associated risk therein. The DMT is one of the main institutions that brings a large amount of revenue to the government and its data base is very important in many aspects including national security. After the computer system failed, the DMT called for assistance from the Sri Lanka Computer Emergency Response Team (SLCERT) of the ICTA. The SLCERT report said that the DMT was very fortunate to survive a major catastrophe, due to the early detection of the problem.

The report highlighted key issues in the DMT computer system. The report said that the system doesn't have a firewall system or up-to-date antivirus protection between the client and the server. The antivirus application was last updated in December 2004. There are no policies with regard to information security such as password policy, shared access policy, backup policy and disaster recovery policy in the system.

The client machines can access the shared folders in the application server without any authentication. The report also highlighted the bureaucracy in the administration and said that there is a distinct lack of cooperation between the IT team and the management, making coordination of recovery activities difficult. There is resistance to change within the team, which impedes the introduction of a solution, the report said.

The report said that the viability of Windows NT use in the system needs to be re-examined by the DMT. Windows NT is an outdated platform and it has limited security features. Currently the vendor Microsoft does not support the Windows NT platform, it said.

The SLCERT team detected that the victim machine was infected by a Worm (CME-24). It attacks security applications and attempts to disable antivirus applications. CME-24

activates and overwrites files with the extensions on the third of every mor
scheduled via a command. Since the worm contains a backdoor to the infec
may not be removed by an antivirus application or a removal tool. It spreads
sharing over the network. It utilises aliases to confuse victims about its iden
system registry keys so that any deleted files will be reactivated when the syster
the report said. Though the IT personnel of the department said that the virus in
from the internet, the report said that the network is isolated and has no inte
connection. The possible infection media could be USB drive, floppy disk or

The SLCERT has made the following recommendations to be implemented in

* Remove all machines from the network, including the server. Install and n
antivirus software on the server and clients before connecting them to the ne
the worm has built-in backdoors and other components that will not be detecte
applications and highly recommended total system backup of the applicat
necessary.

* Long and medium term recommendations of the SLCERT are impo
government institutions handling a similar network. It recommends to replace
NT server with a current server platform such as Windows 2003 server. Th
recommends the installation of firewall and limits access between the clients a

It also recommends obtaining genuine, licensed versions of Microsoft Wind
machines and to formulate and enforce regular update policy. It is learnt tha
used by DMT are assembled machines with no brand and the software running
copies.

* For virus protection, it recommended to formulate a software update policy a
definition files up to date.

The DMT is a key government agency and if it maintains the computer s
manner we wonder how other institutions perform. The government is
governance that computerizes all departments and connects them to one netwo
case shows how poorly these already computerized institutions maintain their
DMT lapse also stresses the need for close monitoring by independent
institutions such as the ICTA (**Source: Sundayobserver.lk**).

Case Study Questions:

(a)   Explain the main causes for this incident and what is the role of ICTA in Sri

(b)   List out key policies mentioned in the above incident and explain the
      individually.

(c)   Explain your views regarding this incident from the socio-technical p
      information system in an organization.

(To

Q2. Multiple Choice Questions (Select Most Appropriate/Suitable Answer-ONLY ONE)

(1) All the hardware and software technologies which are needed to a firm to achieve its business objectives is...
- (A) Information Technology (IT)
- (B) Information System (IS)
- (C) Information System Literacy
- (D) Information Technology Infrastructure
- (E) Strategic Business Objectives of Information Systems

(2) Seeing information systems as composed of both technical and social elements:
- (A) Contemporary Approach
- (B) Organizational and Management View
- (C) Modern Approach
- (D) Sociotechnical View of Information System
- (E) Management Information System

(3) A stable, formal, social structure that takes resources from the environment and processes them to produce outputs:
- (A) Transaction Cost Theory
- (B) Routines
- (C) Organization (technical definition)
- (D) Organization (behavioral definition)
- (E) Agency Cost Theory

(4) Organization using networks to link people, assets and ideas to create and distribute products and services without being limited to traditional organizational boundaries or physical location:
- (A) Core Competency
- (B) Strategic Transition
- (C) Value Web
- (D) Virtual Company
- (E) E-commerce

(5) 'Enterprise Resource Planning (ERP) integrates business processes in manufacturing and production, finance and accounting, sales and marketing, and human resources to a single software system. Data repository where it can be used by many different parts of the businesses. This description is about....
- (A) Enterprise Applications
- (B) Enterprise System
- (C) Information System Application
- (D) Information System at Management Level
- (E) Integrated Software Application

(6) .... is a contemporary term for data and software tools for organizing, analyzing and providing access to data to help managers and other enterprise users make more informed decisions.
- (A) Business Intelligence
- (B) Business Process

(C)   Business Model
(D)   Business Information System
(E)   Business Reengineering

(7)   Stress induced by computer having symptoms that include aggravation, hostil humans, impatience, and fatigue is termed as….

(A)   Ethical issues
(B)   Due Process
(C)   Double Edged Sword
(D)   Techno-stress
(E)   Social issues of Information System

(8)   Junk e-mail sent by an organization or individual to a mass audience of Internet have expressed no interest in the product or service being marketed.
(A)   Opt-out
(B)   Web beacons
(C)   Spam
(D)   Cookies
(E)   Opt-in

(9)   Computers that provide the client computers with a variety of services and cap termed as…

(A)   On-demand service
(B)   Cloud computing
(C)   Two-tiered Client/Server architecture
(D)   Networking system
(E)   Server

(10)   Market demand for your firm's services, firm's business strategy, firm's IT infrastructure, and cost, Information technology assessment, Competitor firm se Competitor firm IT infrastructure investments are key aspects of……
(A)   Web hosting services
(B)   Competitive forces models for IT infrastructure
(C)   The IT infrastructure ecosystem
(D)   Open source software
(E)   Connection between the firm, IT infrastructure, and Business capabilities

(Total 2

Q3.   **Give very short answers to the following questions.**

(a)   *Indicate* three new trends (changes) in Management Information System interrelated changes in the technology area.

(

(b)   *Identify* three main activities an information system has to perform in produce the information that organizations need to make decisions operations, analyse problems, and create new products or services.

(

(c)   *List out* at least three characteristics of a 'digital firm'.

(03 Marks)

(d)   *How* business firms in Sri Lanka manage their Information Systems Function of business? (You must specify at least three ways)

(03 Marks)

(e)   *List out* the four key elements of a Socio-Technical System.

(03 Marks)

(f)   Why some firms are getting less return on their IT investment despite of more investment on information technology?

(03 Marks)

(g)   *What* is 'Unified Communication'?

(02 Marks)
(Total 20 Marks)

Q4.

(a)   *What* are the key components of IT Infrastructure of an organizations?

(04 Marks)

(b)   *Discuss* the association between. information system/information technology and business strategy of an organization with suitable examples or models.

(08 Marks)

(c)   *How* would you differentiate an 'Information System Success' from an 'Information Systems Failure'? *Discuss.*

(08 Marks)

(Total 20 Marks)

Q5.

(a)   "The major ethical, social, and political issues raised by Information Systems include the several moral dimensions". *List out* at least **five** such dimensions.

(05 Marks)

(b)   *Identify* one Social or Ethical Issue related with Information Systems in Sri Lankan context and *explain* that issue by using above mentioned (a) dimensions.

(05 Marks)

(c)   What is cybersecurity? And Identify its key elements.

(05 Marks)

(d)   *Explain* the actual steps in starting e-commerce or e-business or digital business in Sri Lanka.

(05 Marks)

(Total 20 Marks)