
CERTIFIED PUBLIC ACCOUNTANT

LEVEL 2 EXAMINATIONS

F 2.3 : INFORMATION SYSTEMS

THURSDAY : 12 JUNE 2014

INSTRUCTIONS:

- 1. Time Allowed: 3 hours 15 minutes (15 minutes reading and 3 hours writing).**
- 2. This examination has seven questions and only five questions are to be attempted.**
- 3. Marks allocated to each question are shown at the end of the question.**
- 4. Show all your workings**

QUESTION ONE

The process of developing new programs involves a series of stages which are collectively referred to as program development life cycle.

Required :

- (a) Name and describe the main stages in the program development life cycle in a sequential narrative. **(10 Marks)**
 - (b) Explain how the use of Computer Aided Software Engineering (CASE) improves programming productivity. **(4 Marks)**
 - (c) Explain how structured walkthrough addresses some areas of interest in a new program under programming productivity. **(6 Marks)**
- (Total: 20 Marks)**

QUESTION TWO

Management Information Systems should facilitate decision-making at all levels of management. Each level requires information with different characteristics and with differing degree of profitability.

Required :

- a) Examine the characteristics of information used in
 - (i) Strategic planning **(5 Marks)**
 - (ii) Operational control. **(5 Marks)**
 - b) Discuss the features of deterministic, stochastic and adaptive systems. Give a practical example of each type of system. **(10 Marks)**
- (Total: 20 Marks)**

QUESTION THREE

- a) The widespread use of computers in offices has raised major health and safety issues. Describe three major health related problems that may result from intensive computer use and list three products that may be made available to improve the working conditions of personnel using computers. **(9 Marks)**
 - b) Describe any three basic strategies that an organization can employ to obtain competitive advantage and illustrate the role of Information Technology in each case. **(9 Marks)**
 - c) Distinguish between online and offline transactions. **(2 Marks)**
- (Total: 20 Marks)**

QUESTION FOUR

Four companies A, B, C and D, which have similar activities but are not part of a group, have the following computer configurations,

Company A: Three stand-alone micro-computers (CPU, VDU, Keyboard, hard disk and mouse) each having its own printer.

Company B: Small office with 11 micro-computers linked in a Local Area Network (LAN). Each micro-

computer has its own processing ability, but is linked via the LAN to central printers, disk storage, and file server and tape streamer devices. The LAN is completely “self-contained”, this means that there are no modems or other similar external devices attached to it.

Company C: Four processing locations connected by a Wide Area Network (WAN). Each location has a LAN in the same configuration as company B, although there is also a dedicated landline to two of the three offices (offices are connected in a ring to two of the other offices). Each server is updated with data from the other three locations at 15 minute intervals.

Company D: Twenty processing locations, each with its own LAN in the same configuration as company B. All locations are connected in a star configuration to head office. File servers at each location are updated from head office after every five minutes; each location has a reserved external telephone line for selected customers to use. Orders by customers are transmitted direct on to the company D’s Computer system

Required :

- (a) State, with reasons, for each company, what security procedures should be applied to ensure there is no unauthorized access to its computer system. **(12 Marks)**
 - (b) In general, state and explain the data communication systems you would recommend. **(8 Marks)**
- (Total 20 Marks)**

QUESTION FIVE.

(a) You are a manager in one of the leading accounting firms in the country. You have been registered as a network user on the company’s local area network (LAN) which enables you to send memos by electronic mail. You are however, concerned about the security of the LAN.

Required :

- (i) Explain four administrative controls that should be implemented to guarantee the network security. **(4 Marks)**
 - (ii) Describe three methods or techniques used to secure the electronic mail messages being transmitted through the network. **(3 Marks)**
 - (iii) Explain three policy issues that should be put in place to reduce viruses from attacking your network. **(3 Marks)**
- b) i) Name and explain opportunities e-business may offer to both companies and their customers. **(6 Marks)**
 - (ii) Examine two challenges that may hinder a company’s attempt to implement the e-business concept. **(2 Marks)**
 - iii) What are the four main applications of a database system in a credit department? **(2 Marks)**
- (Total 20 Marks)**

QUESTION SIX

(a) Transaction processing systems capture and process data resulting from the occurrence of business transactions, to update organizational databases in order to produce a variety of information.

Required : Explain the five stages of a transaction processing cycle. **(10 Marks)**

(b) A data dictionary is a repository of information about data.

Explain the characteristics of a data dictionary. **(4 Marks)**

(c) The concept of an intelligent workstation is a combination of a personal computer and access to a local or wide area network. The hardware, software and communication are integrated into one facility.

Required :

Define and differentiate functional integration and physical integration in a workstation environment.

(6 Marks)

(Total 20 Marks)

QUESTION SEVEN

(a) Any communication network, such as a telephone system, can be connected to others. This is an example of connectivity, the ability to connect computers, telephones and other devices to other computers, other devices and sources of information. It is this connectivity that is the foundation of the Information Age. Connectivity has also made many activities possible.

Required :

Explain any four activities that have become possible because of connectivity. **(8 Marks)**

b) The increased use of multimedia technology can be largely attributed to the easy-to-use presentation software together with the decreasing costs of the necessary hardware such as LCD projection panels and laptop computers.

Required :

(i) State four elements of multimedia technology. **(4 Marks)**

c) The development of powerful desktop computers coupled to telecommunication networks has revolutionized the way organizations may carry out their business.

The following are some alternatives for an organization's internal and external communications:

Explain :

a) Client-Server **(2 Marks)**

b) Internet **(2 Marks)**

c) Intranet **(2 Marks)**

d) Extranet **(2 Marks)**

(Total 20 Marks)

End of question paper