

CEX7112 - Management Information Systems for the Construction Industry



FINAL EXAMINATION - 2009

Time Allowed: Three Hours

Date: 2010 - 03 - 28 (Sunday)

Time: 1400 - 1700 hrs

Answer any Four (04) questions.

Q1.

i.) Clearly describe the middle level of the three level hierarchical structure of a contemporary Management Information System, contrasting among other levels on type of information and significance of the said level.

(Marks 08)

ii.) You have been requested to deliver the opening introductory address at a Seminar organized by the Civil Engineering Sectional Committee of the Institution of Engineers Sri Lanka (IESL), on the topic 'Role of Management Information Systems for the Construction Industry in the 21<sup>st</sup> Century'. Assuming that the participants for the seminar are Engineers about to face 'Professional Review' for their Charter, prepare guideline notes to assist you in this address.

(Marks 08)

iii.) Several significant developments in Engineering, Technology and Management has contributed towards the rapid development of automated Management Information Systems that we utilize today. Identify *four (04)* of these areas of development with descriptions on the contributions made by each.

(Marks 09)

Q2.

i.) In developing a MIS for a particular application, the first step is the formulation of a Master Plan. There are three logical approaches available for this aspect. Name and describe these three approaches in detail.

(Marks 08)

ii.) Determination of the data required is an important step in the development of a MIS. There are different approaches available to accomplish this step. Describe two significant approaches available for this purpose.

(Marks 08)

iii.) In any Management Information System, involvement of people is an invariable reality. Discuss the bearing of this 'Human Factor' on the success of an MIS with examples.

(Marks 09)

Q3.

i.) Designers of systems such as Management Information Systems (MIS) adopt a technique called "Systems Method" in structuring their designs. Describe the major characteristics of this method.

(Marks 08)

ii.) Describe the *four (04)* types of 'controls' that should be embedded into a MIS for its reliable functioning.

(Marks 08)

iii.) When a new Management Information System is developed for an organisation, the existing system has to be converted to the new. This 'conversion' could be done using several approaches. Describe the *four (04)* major ways available for this operation.

(Marks 09)



Q4.

- i.) Describe the following:
- Flowcharting
  - Hierarchy plus Input-Processing-Output (HIPO)

(Marks 08)

- ii.) The role of the Operating System, which is the interface between the hardware and user programmes had been substantial throughout the history of the development of computers. Describe the functions expected of an "Operating System" for microcomputers with a chronological account on their development to current level of functions and operator ease in handling.

(Marks 08)

- iii.) Engineering applications often require data handling through multiple stages of calculations. One of the very versatile tools made available to the Engineer from the early days of computers is an application software called a "Spread Sheet", which are designed to manipulate data on a two dimensional plane. After describing the salient features that should be present in such a software package, establish the steps involved in the development of a computer based tool for extracting quantities from Structural & Layout drawings for a housing project and preparing the Bill of Quantities (BOQ).

(Marks 09)

Q5.

- i.) One of the reasons for the popularity of microcomputers is the substantial advances made in the 'storage media' technologies. Discuss the types, storage technologies and capacities of currently popular storage media for use with microcomputers.

(Marks 08)

- ii.) Describe how e-mail system works and useful features available with the system. Further, describe other useful facilities apart from simple mail transfer, available through the e-mail systems.

(Marks 08)

- iii.) Describe the evolution of graphic displaying technology for computers while emphasizing hardware specifications, display resolutions, and colour rendering capabilities.

(Marks 09)

Q6.

- i.) Describe two (02) popular topologies available for networking indicating preferred uses for each type.

(Marks 08)

- ii.) Describe "Internet" and discuss how it works. Also, describe the advantages that the construction industry can derive from using the internet.

(Marks 08)

- iii.) Describe the major categories of "viruses" that affect computers and indicate ways to protect computers and networks from these viruses.

(Marks 09)

