

THE OPEN UNIVERSITY OF SRI LANKA
 Department Of Civil Engineering
 Post Graduate Diploma in Technology - Construction Management - Level 7



CEX7112 - Management Information Systems for the Construction Industry
 CEP2112/CEE7112 - Management Information Systems

FINAL EXAMINATION - 2005

Time Allowed : Three Hours

Date: 2006 - 04 - 03 (Monday)

Time: 0930 - 1230 hrs

Answer any Four (04) questions.

Q1.

i.) Discuss the historical development of Management Information Systems (MIS) with particular emphasis on recent trends which gave rise to more efficient, adaptive and large scale MISs to supplement the management of large enterprises of today.

(Marks 08)

ii.) Discuss the concepts of Data, Information and Knowledge, pertaining to a present day Management Information System with particular reference to levels at which each concept becomes significant.

(Marks 08)

iii.) Explain the ways in which a medium scale highway construction contractor can utilize a customized Management Information System to improve Productivity, Competitive edge and Profit.

(Marks 09)

Q2.

i.) Describe in detail the main characteristics of the "Systems Method" used by designers.

(Marks 08)

ii.) In the "Development Process" for a system, three (03) major stages are identified. Describe these stages with specific reference to Management Information System development.

(Marks 08)

iii.) One of the most common techniques adopted in the development of "Systems" such as a Management Information System is "Systems Development Life Cycle Model". Describe the four (04) phases of this technique highlighting the bearing on Management Information System development.

(Marks 09)

Q3.

i.) Present day popularity and utility of Management Information Systems could be largely attributed to "Programmable Computers" which had been the most significant break-through to present day. Describe the concepts and principles of Programming with specific reference to the four (04) classifications to which programming instructions are grouped.

(Marks 08)

ii.) Clearly describe what is meant by "Structured Programming". Explain the significant advantages of this type of programming over other methods.

(Marks 08)

iii.) Invariably, all existing organizations have a Management Information System in some form or the other, being utilized by the staff. Therefore when a new system is introduced, it cannot be done in an abrupt manner. This transition or the conversion phase of new system introduction can be handled in several ways. Describe possible four (04) methods available for conversion.

(Marks 09)



Q4.

- i.) Electronic manipulation speeds and storage capabilities have tremendously expanded during past few years enabling quite cheap and extremely fast computers. However, to use these physical capabilities to computational requirements of the users a software interface called an "Operating System" is required. Describe the functions expected of an Operating System for microcomputers with a chronological account on their development to current sophistication and user-friendliness.
(Marks 08)
- ii.) Presentation of ideas to other people at a lecture or a seminar has lately been influenced by computers with multimedia capabilities. To utilize the full power of the multimedia capabilities of computers for these purposes a category of programs called "Presentation Software" has evolved. Describe the features expected of such software to be used in the construction industry for conceptual explanations, technical briefings, site meetings, etc.
(Marks 08)
- iii.) Data handling, which requires multiple stages of calculations, is commonly encountered in Engineering application. One of the more versatile solutions these type of problems are provided in the form "Spread Sheet Software" which are designed to manipulate data on a two dimensional plane. Describe the salient features that should be present in a spreadsheet software package. Further, state 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.) E-mail is the personal written communication system that gained wide acceptance in the information age. Describe how e-mail system works and useful features available with the system. Further, describe how large files can be made smaller (such as AutoCAD drawing files, audio or video files), so that they can be sent through e-mail.
(Marks 08)
- ii.) "Micro Processors" for computers have evolved tremendously from early 1980s' to the present day. It is one of the major factors that contributed in the information revolution. Describe the chronological evolution of the famous 'Intel' range of Micro Processors with particular reference to clock speeds and data bus widths.
(Marks 08)
- iii.) 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 09)

Q6.

- i.) Discuss the conceptual meaning of "Artificial Intelligence" (AI) as applied to computer and information technology. Use a possible application of AI in the construction industry to illustrate the future use of such technology.
(Marks 08)
- ii.) Distinguish between a Local Area Network (LAN) and a Wide Area Network (WAN) with a discussion on general "Topologies" available in configuring computer networks with desired application types.
(Marks 08)
- iii.) Describe the working concept of "Internet". What are the possibilities available for the construction industry to exploit the worldwide coverage of Internet?
(Marks 09)