THE OPEN UNIVERSITY OF SRI LANKA
Department of Civil Engineering
Postgraduate Diploma in Technology - Construction Management - Level 7

00036

CEX7112 – Management Information Systems for the Construction Industry

FINAL EXAMINATION – 2012/2013

Time Allowed: Three Hours

Date: 2013 - 08 - 18 (Sunday) Time: 0930 - 1230 hrs

Answer any Four (04) questions.

Q1.

i.) MISs are fundamentally based on the premises of the concept of systems. Discuss "**Systems Concept**" highlighting the *three (03)* underlying assumptions on which this concept is based.
(Marks 08)

ii.) Discuss the historical development of Management Information Systems (MIS) with particular emphasis on recent trends in *four (04)* specific areas related to Engineering and Management, which gave rise to more efficient, adaptive and large scale MISs to supplement the management of large enterprises of today.
(Marks 08)

iii.) Notwithstanding the present trend is to apply modern MISs to every possible economic enterprise, develop an argument <u>against</u> employing a computer based Management Information System for a construction contractor involved in irrigation tank rehabilitation.
(Marks 09)

Q2.

i.) In the Management Information Systems "**Development Process**", *three (03)* major stages are identified. Describe these stages.
(Marks 08)

ii.) Discuss the bearing of the invariable '**Human Factor**' on the success or failure of a MIS with descriptive examples from the construction industry.
(Marks 08)

iii.) In the development of "Systems" such as a Management Information Systems a common technique employed is the "**Systems Development Life Cycle Model**". Discuss the *four (04)* stages of this technique.
(Marks 09)

Q3.

i.) Explain "**Structured Programming**" and the advantages it offers in system development.
(Marks 08)

ii.) Describe the concepts and principles of Programming languages in line with the *four (04)* **categories** to which programming instructions are grouped.
(Marks 08)

iii.) When a new MIS is introduced to an organization, it should not be done in an abrupt manner since every organization has a MIS in some form or other. The transition or the conversion can be handled in one of the *four (04)* well known methods. Describe these methods.
(Marks 09)

Q4.

i.) Describe the functions expected of an **"Operating System"** for a microcomputer. Further, present an account of the development of operating systems to the sophistication of present day, indicating levels of utility and user-friendliness of these systems at each stage.

(Marks 08)

ii.) Computers with multimedia capabilities have lately influenced Presentation of ideas to other people at a lecture or a seminar. 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.) 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.) Describe and discuss the main components that should be available in the **"System Unit"** of a micro-computer with multimedia, networking and communication facilities via telephone lines.

(Marks 08)

ii.) Describe how **e-mail** system works in comparison to the regular postal system and useful features available within the system. Further, describe other useful facilities apart from simple mail transfer, available through the e-mail systems.

(Marks 08)

iii.) **"Capacities, efficiencies and reliability of data storage media for computer applications have progressed in a very rapid pace during the past decade".** In the light of this statement discuss the physical types, interface technologies and capacities of currently popular storage media for use with microcomputers.

(Marks 09)

Q6.

i.) Discuss the fundamental concepts on which **"Knowledge Based Systems"** (KBS) are based in the context of computer and information technology and describe possible applications in the construction industry.

(Marks 08)

ii.) Discuss the evolution of the **"Internet"** with particular emphasis on developments in communication technology, which led to its present popularity.

(Marks 08)

iii.) A major threat to computer and electronic communication based MISs are the so called computer viruses. Describe a **"computer virus"** with reference to various forms in which they afflict computer systems. Further, give a brief account of the way **"anti-virus"** programmes detect and clean viruses.

(Marks 09)