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

CEX7112 – Management Information Systems for the Construction Industry

FINAL EXAMINATION – 2017/2018

Time Allowed: Three Hours

Date: 2019 - 02 - 12 (Tuesday)	Time: 0930 - 1230 hrs

The paper contains Six (06) questions. Answer any Four (04) questions.

Q1.

i.) Discuss the key concepts of **Data, Information and Knowledge** pertaining to a present day **Management Information System (MIS)** in relation with 'Management Levels' at which each becomes significant.

(Marks 08)

ii.) Discuss in detail the reasons for the resurgence of interest in the area of **Management Information Systems** within both corporate and academic spheres during the past several decades.

(Marks 08)

iii.) Describe the *five (05)* **Most Essential Elements** of a good Information System from about nine such identified essential elements.

(Marks 09)

Q2.

i.) What are the advantages offered by "**Structured Programming**" for MIS system development? Explain through a descriptive note.

(Marks 08)

ii.) In line with the *four (04)* "**Categories**" to which programming instructions are grouped, describe the concepts and principles of Programming Languages.

(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 an existing MIS in some form or the other. The transition or the conversion can be handled in one of the *four (04)* well known methods. Describe these methods.

(Marks 09)

Q3.

i.) As for any other project, a Master Plan is required in the development of a MIS. Out of the three techniques available for the development of a master plan, describe the 'Top - down' approach, with advantages and disadvantages of the method.

(Marks 08)

ii.) Management Information System development has to incorporate different 'Controls' to minimize errors, manipulations and fraud. Under the *four (04)* types of generic control categories disscuss how these controls work to fulfill the objectives.

(Marks 08)

iii.) Describe the *four (04)* phases of the technique known as "**Systems Development Life Cycle Model**" generally adopted for the development of Management Information Systems.

(Marks 09)

Q4.

i.) Based on technological facts and your individual perception as an Engineer, state an accurate and comprehensive definition for "Internet", and discuss the technological support it could provide in conjunction with Global Positioning Systems (GPS) for a Sri Lankan Construction company bidding for a road construction project in Mauritius.

(Marks 08)

ii.) Describe a "computer virus" which is a major threat to computer and electronic communication based MISs, with reference to various forms in which they afflict computer systems with a brief account on interventions known as "anti-viruses".

(Marks 08)

iii.) Technological basis for personal telecommunication has now been firmly established as **Cellular radio network based mobile connectivity.** Make an account of historical evolution of this technology, presently at the Fifth stage of development.

(Marks 09)

Q5.

i.) Describe the widely used operating system known as **"Android"** for electronic communication and data processing devices with emphasis on present state of development, available features and vulnerability to virus attack.

(Marks 08)

ii.) What are the advantages of Secure Digital (SD) storage memory cards over Flash memory cards, which are both utilized for data storage?

(Marks 08)

iii.) Comprehensively describe the main components in a "Lap-top" computer along with their functions. Further discuss the facilities available in a Laptop computer with an Intel Core i7 processor, to reduce battery drain.

(Marks 09)

Q6.

i.) Discuss the range of commercially used optical data storage media concentrating on evolution from CD through DVD to Blu-Ray, with reference to storage capacity, speed of access, data integrity, etc.

(Marks 08)

ii.) Write a description on **Artificial Inteligence (AI),** with emphasis on historical development, present status and opportunities available for the construction industry to employ the techniques available.

(Marks 08)

iii.) Describe the *two (02)* moist commonly used <u>short range</u> Wire-less technologies for communication between computing and communication devices, where wire or cable based technologies have been conventionally used.

(Marks 09)