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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 – 2016/2017

Time Allowed: Three Hours

Date: 2017 - 12 - 05 (Tuesday) Time: 0930 - 1230 hrs

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

Q1.

i.) From the latter part of the 20th Century up to date, there has been a great resurgence of interest in the area of **Management Information Systems** within both corporate and academic spheres. In detail discuss the reasons for this trend.

(Marks 08)

ii.) State the *three (03)* salient premises around which the **'Systems Concept'** is structured and describe the main procedures of implementing the **'Systems Method'** for an enterprise.

(Marks 08)

iii.) Comonsurate to the incurred expenditure, implementing modern MISs for many types of construction managemet operations may not result in improvement in productivity. With this aspect in view, develop arguments <u>against</u> venturing for a a computer and communication based MIS for a construction project of multiple irrigation tank rehabilitation in the Eastern Province.

(Marks 09)

Q2.

i.) In references to **Management Information System** development, describe the generally identified *three (03)* major stages of the **"Development Process"** for a system.

(Marks 08)

ii.) Breifly describe the *five (05)* most **essential elements** of a good Information System from about nine such identified essential elements.

(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)

Q3.

i.) As in any project, the development of a MIS should also be structured around a **Master Plan.** Out of the three techniques available for the development of a master plan, describe the **'Bottom - up'** approach generally considered as the 'natural' way, with advantages and disadvantages of the method.

(Marks 08)

ii.) Programming languages consist of instructions given to computing machines in line with *four (04)* **categories.** Describe these four categoriesof instructions.

(Marks 08)

iii.) 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 objectives are met.

(Marks 09)

Q4.

i.) In comparison with the regular postal system, describe how **e-mail** system works 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)

ii.) Describe the attributes expected of an **"Operating System"** for an electronic data processing device and discuss the chronological development of operating systems to the present day with emphasis on employement of Graphical User Interface (GUI) in such systems.

(Marks 08)

iii.) Discuss the range of physical types, interface technologies and storage capacities of currently popular **data storage media** for use with computers and other electronic and communications devices with a brief history on the development of such media.

(Marks 09)

Q5.

i.) Describe the main components that should be available in the **"System Unit"** of a laptop computer with multimedia, networking and communication facilities.

(Marks 08)

ii.) For short range communication between computing and communication devices, where wire or cable based technologies have been conventionally used, the current trend is to use **Wire-less** technologies. Describe *two (02)* such wire-less technologies extensively used today.

(Marks 08)

iii.) Discuss the fundamental concepts on which **"Knowledge Based Systems"** (KBS) in the domain of **Artificial Inteligence (AI),** are based in the context of computer and information technology and describe possible applications of KBSs in the construction industry.

(Marks 09)

Q6.

i.) **Cellular radio network based mobile communications** have pervaded throughout the world at an astonishing rate during the past two decades. Describe the development of this technology through well known four (04) stages up to now and the fifth stage almost ready to be implemented world-wide.

(Marks 08)

ii.) After describing the historical development and working concept of **"Internet"**, discuss on the possibilities available for the construction industry to exploit the worldwide coverage and accessibility of the Internet.

(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)