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THE OPEN UNIVERSITY OF SRI LANKA

Department of Civil Engineering

Postgraduate Diploma in Technology - Construction Management - Level 7

CEX7112 - Management Information Systems for the Construction Industry



FINAL EXAMINATION - 2014/2015

Time Allowed: Three Hours

Date: 2015 - 09 - 21 (Monday)

Time: 0930 - 1230 hrs

Answer any Four (04) questions.

Q1.

i.) As an Engineer with a sound background on construction management coupled with computer applications you have been invited to make a one hour presentation on Management Information Systems to first year Engineering undergraduate students at a state university. Develop a draft outline on the areas you would like to educate the audience, so that they will have a sound conceptual founding on MIS.

(Marks 08)

ii.) While highlighting by examples that the definition of a system is not strictly unified and several interpretations are available, describe a "System" with distinguishing characteristics and relevance to management.

(Marks 08)

iii.) The significant initial step in the formulation of a MIS is the structuring of the master plan for the purpose. In the development of a Master Plan for an MIS describe the 'Bottom - up' approach and discuss the advantages and disadvantages of the method.

(Marks 09)

O2.

i.) Clearly describe and contrast the differences between the *three* (03) common hierarchical levels found in a Management Information System, with particular reference to the depth of data processing relevant to each level.

(Marks 08)

ii.) In reference to MIS, describe the *three* (03) identified major stages in the "Development Process" for a system.

(Marks 08)

iii.) A common techniques adopted in the development of a "System" such as a Management Information System is the "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.) With special reference to the *four (04)* **classifications** to which programming instructions are grouped, describe the concepts and principles of Programming.

(Marks 08)

ii.) Describe the advantages that could be gained by the application of "Flow Charts" in the development of Management Information Systems.

(Marks 08)

- ii.) Write descriptive notes on the following;
 - a.) Decision Tables

b.) Structured walkthrough

(Marks 09)



Q4.

i.) Discuss the functions expected of a present day "Operating System" for a computer and present an account of the development of operating systems for microcomputers to the present day sophistication, chronologically indicating the levels of utility and user-friendliness of these systems.

(Marks 08)

ii.) Computers with multimedia capabilities have revolutionized the conveying of ideas and knowledge. 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.) 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 has been designed to manipulate data on a two dimensional plane. After describing the salient features that should be present in such a software package, briefly describe 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 (BOQs).

(Marks 09)

Q5.

- i.) One of the reasons for the vast popularity of microcomputers in the recent years 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.) The present day MIS is centered on the Personal Computer, which is the System-Human interface. Describe and discuss the main components that should be available in the "System Unit" of a micro-computer with multimedia, networking and communication facilities.

 (Marks 08)
- iii.) "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 09)

Q6.

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.) Short range electronic communication under <u>secure</u> conditions have recently evoleved substantially to shift communication links between computing and communication devices from Cables to Wire-less technologies. Describe *two* (02) such popular wire-less technologies today with possible example of applications in the construction industry.

(Marks 08)

iii.) 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 09)

