THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF ENGINEERING TECHNOLOGY

DIPLOMA IN TECHNOLOGY – LEVEL 02

FINAL EXAMINATION – 2008

MEX2132 –DESIGN PHILOSOPHY

DATE : ***APRIL 02, 2009***

TIME : ***0930 HRS. – 1230 HRS***

DURATION : ***THREE HOURS***

PLEASE READ THE FOLLOWING INSTRUCTIONS BEFORE ANSWERING THE PAPER

INSTRUCTIONS:

1. *This paper consists of eight questions. Answer any **five questions only.***
2. *Each question carries marks as indicated amount in the question.*
3. *Answers should be written on the answer books provided by the Examinations Division.*

Question 01

(1.1) Taking suitable examples, distinguish between a 'well defined problem' and an 'ill defined problem'

(1.2) Explain the methods available for improving the initial definition of an ill-defined problem.

(1.3) "Statement of the problem" is one of the vital stages during the design process. Briefly explain the elements in this stage.

Question 02

(2.1) Distinguish between 'Descriptive Models' and 'Prescriptive Models'.

(2.2) What is meant by 'embodiment of schemes'? Explain your answer by taking an appropriate example.

(2.3) "Analysis of the problem is a vital design task to be accomplished during the design process". In the above statement, what is meant by "Design task"? What is the outcome of the design task?

Question 03

(3.1) Explain the objectives of functional analysis method.

(3.2) *Black box representation is often used in functional analysis method.* In black box representation, explain the significance of defining the overall function as broad as possible at the initial stages of design.

(3.3) Discuss the major steps involved in black box representation method. You may take an example to explain your answer.

Question 04

(4.1) What are the different methods available for exploring information in order to identify and define a given problem?

(4.2) What role does the computer play in the design process.

(4.0) The 'customer' is considered an important person in the design process. Elaborate on the statement.

Question 05

(5.1) Discuss the importance of sorting out the objectives of a design task into different levels. Support your answer with an aid of an example.

(5.2) Distinguish between 'Function-mean tree diagram' and 'Objectives-sub-objectives tree diagram' in sorting objectives of a design task.

Question 06

(6.1) Why is it important to establish an accurate performance specification at the initial stages of the design process?

(6.2) Discuss the factors which has to be taken into consideration when setting requirements to a particular design problem.

(6.3) Identify the main steps of 'Performance Specification Procedure' and describe the functions in each of them.

Question 07

(7.1) *A design must be absolutely right before it goes into production.* Discuss the consequence of this statement in the context of modern design environment. .

(7.2) Research has reviled that scientist and designers tend to employ different approaches in solving a particular design problem. Explain with examples these different approaches employed by scientists and designers.

Question 08

Select a suitable problem in the society of which you are a member and as a person who is required to find an appropriate solution for the above problem.

(8.1) Write a design brief for the solution of the above problem.

(8.2) List out clearly the design objectives and expanded objectives.

(8.3) Arrange the objectives into hierarchically ordered set of objectives as high-level ones and low-level ones.

(8.4) Represent the hierarchically arranged objectives in the form of an objective-tree diagram.

~ END ~

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