THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF ENGINEERING TECHNOLOGY

DIPLOMA IN TECHNOLOGY – LEVEL 02

FINAL EXAMINATION – 2007

MEX2132 –DESIGN PHILOSOPHY

043

DATE : *MAY 09, 2008*

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) Explain the importance of Communication in the design process. Take suitable examples to elaborate on your answer *(08 marks)*

(1.2) Discuss the role of Computers as a method of presentation tool for designers. *(06 marks)*

(1.3) In most design exercises, team work yields successful results. Do you agree or disagree with this statement? Elaborate. *(06 marks)*

(Cont...)

Question 02

(2.1) What are the major differences between traditional design approach and modern design approach when designing a product? *(08 marks)*

(2.2) Distinguish between 'a design' and 'a designer' in relation to design philosophy. *(06 marks)*

(2.3) Discuss the benefits of Drawings in the design process. *(06marks)*

Question 03

(3.1) Distinguish between a *well-defined problem* and an *ill-defined problem*. Explain your answer by drawing suitable examples. *(08 marks)*

(3.2) What are the means of improving the initial definitions of an *ill-defined* problem? *(05 marks)*

(3.3) In most design exercises, team work yields successful results. Do you agree or disagree with this statement? Elaborate. *(07 marks)*

Question 04

(4.1) Briefly describe five design methods available for overcoming difficulties in design problems. *(10marks)*

(4.2) Descriptive models and perspective models are two main models used in design process. Explain each of them given consideration to their basic structure and elaborate on the applicability of the above models for design process. *(10 marks)*

Question 05

(5.1) "Design methods externalize design thinking". Comment on this statement in the context of design methods. *(07 marks)*

(5.2) Explain how brainstorming promotes creativity in designing a product. *(06 marks)*

(5.3) Define the term 'synectics' in your own words. Explain how synectics differ from brainstorming. *(07 marks)*

(Cont...)

Question 06

(6.1) What Black Box representation is often used in fictional analysis method. Explain what is meant by Black Box representation and the importance of defining the overall function as broad as possible at the initial stages of a design.

(10 marks)

(6.2) Define "System boundary" in the context of Black Box representation and discuss the effects of system boundary on a particular design problem. Explain your answer by drawing a suitable example. *(10marks)*

Question 07

(7.1) Explain briefly the factors which have to be taken into consideration when setting requirements to a particular design problem. *(10 marks)*

(7.2) Identify the main steps of 'Performance Specification Procedure" and describe the functions carried out in each of them. *(10 marks)*

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.

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

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

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

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

(20 marks)

~ END ~

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