THE OPEN UNIVERSITY OF SRI LANKA

FACULTY OF ENGINEERING TECHNOLOGY

DIPLOMA IN TECHNOLOGY – LEVEL 03

FINAL EXAMINATION – 2008

MEX3174 – PRINCIPLES OF DESIGN

051

DATE : ***APRIL 08, 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) Explain the definition of 'design'. Select a suitable example to elaborate on your answer.

(1.2) *The will to design things is inherent in human beings and conceiving ideas is not something that always need special abilities.* Comment on the statement in relation to evolution of design.

(1.3) *History shows us that there has not been any exclusive or easily recognizable class of persons regarded as "designers". Many complex, beautiful, functional and civilizing artifacts have been created without consciously designing them. In today's world, this has changed.* What are the reasons for these changes?

Question 02

(2.1) Distinguish between traditional design and modern design methods.

(2.2) Why is drawing considered to be an important factor in the modern design process?

(2.3) Discuss the role of computers in modern design process.

Question 03

(3.1) *Engineering design is often considered as an interface with society, economy and technology.* Do you agree with this statement? Justify.

(3.2) *Some technological innovations alter the course of history and others are quickly forgotten. Comment* on the above statement.

(3.3) Discuss the concept of 'design for sustainability'.

Question 04

(4.1) Explain the importance of a design charrette in collaborative design approach.

(4.2) Discuss at least four factors to be taken into consideration in holistic design approach.

(4.3) What are the drawbacks of not having considered the aesthetic factors into consideration in the design process? Explain by taking a suitable example.

Question 05

(5.1) Elaborate on the statement 'Design for the environment'. Take a suitable example to explain your answer.

(5.2) *Building sustainable consumption and production patterns globally has become a pressing issue*. Propose ways in which sustainable consumptions and production can be promoted.

(5.3) One of the myths concerning sustainable consumption and production is that it only affects those in developed countries. Why is it considered a myth?

Question 06

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

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

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

Question 07

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

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

(7.3) "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 08

(8.1) What is meant by "Familiarization" and "Externalization" of design?

(8.2) Briefly explain the steps to be carried out when establishing functions in function analysis method.

(8.3) What are the steps in performance specification procedure? Explain.

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