

**THE UNIVERSITY OF SYDNEY**  
**FACULTY OF ENGINEERING**  
**SCHOOL OF ELECTRICAL AND INFORMATION ENGINEERING**

**ELEC4706 PROJECT MANAGEMENT**

June 2007

Time allowed: Two hours

- This is a CLOSED book exam: NO notes, books or calculators.
  - There are FIVE (5) questions. These are of equal value. Sub-parts are of equal value.
  - Answer ALL questions.
  - In all cases, the textbook provides the definitive answer.
- (a) The exam paper consists of three pages, including this cover sheet.

**QUESTION ONE (12Marks)**

In an engineering design project:

- a) What is an objective tree and what are the problems often found within them?
- b) What are metrics and what are some of the types of measures used with them?
- c) What do we mean by basic functions, secondary functions, required secondary functions and unwanted secondary functions?
- d) What are some of the methods commonly used to identify and specify functions for an engineering design?

**QUESTION TWO (12 Marks)**

- a) What are the main sections that you would find in a Business Plan?
- b) What are the differences between a Profit & Loss Statement and a Balance Sheet?
- c) What do we mean by “time value of money”?
- d) What do the following refer to: DFM, DFQ, BOM

**QUESTION THREE (12 Marks)**

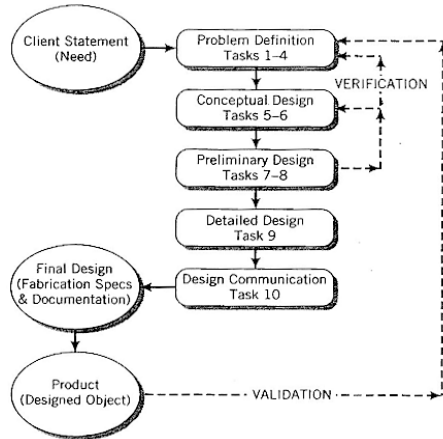
- (a) What makes a document a controlled document?
- (b) Two controlled documents in engineering design are often referred to as a marketing requirements document (MRD) and an engineering design specification (EDS). What is the purpose of these documents and what do they contain?
- (c) What do we mean by V V T in engineering design and how does V V T fit into the design flow?

**QUESTION FOUR (12 Marks)**

- a) What do we mean by “professional ethics”? Illustrate this by stating the main terms of the IEEE Code of Ethics.
- b) As a result of previous experiences as a designer of electronic packaging, you understand a sophisticated heat-treatment process that has not been patented, although it is considered “company confidential”. In a new job with a different company, you are designing beverage containers and you believe that this heat treatment process could be effectively used. Explain the issues that need to be addressed if you wanted to use your previous knowledge?

**QUESTION FIVE (12 Marks)**

The following figure is a model of an engineering design project:



What follows below in (a), (b), (c) and (d) are four main classes of management issues to be addressed within the design project. Describe where these classes fit into the above figure, explain the main objective of each of these four classes of management activity and name any relevant management tool.

- (a)
- Project Scheduling**  
 -Assignment of tasks  
 -Scheduling resources and tasks  
 -Scheduling costs

- (b)
- Project Framework**  
 -Work breakdown  
 -Project team

- (c)
- Project Definition**  
 -Client's feasibility study  
 -Orientation meeting  
 -Defined scope, budget, and schedule

- (d)
- Project Tracking, Evaluation, and Control**  
 -Tracking work, time, and cost  
 -Comparison with work plan  
 -Analysis of trends  
 -Revision of plans

**THIS IS THE END OF THE QUESTIONS**

THIS PAGE IS FOR ROUGH WORK

THIS IS THE LAST PAGE