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**UNIVERSITI SAINS MALAYSIA**

1<sup>st</sup> Semester Examination  
2010/2011 Academic Session

November 2010

**EUP 501/4 –Engineering Management**

Duration: 3 hours

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Please check that this examination paper consists of **FOUR (4)** printed pages before you begin the examination.

Instructions: This paper contains **SIX (6)** questions. Answer **FIVE (5)** questions only.

You must answer the questions in English.

All questions **MUST BE** answered on a new sheet.

1. a) One of the primary challenges in Project Management is to achieve goals and objectives of a project within the agreed cost and duration (time).

Discuss briefly how this can be successfully achieved in actual practice.

[10 marks]

- b) “Listen to Intuition” is one of the key elements listed in Project Management’s 10 Commandments.

By applying this element into your daily routine, discuss how knowledge and experience can lead to better decision making.

[10 marks]

2. a) Explain your understanding on the following terms:

- i) risk;
- ii) uncertainty; and
- iii) opportunity.

[10 marks]

- b) One of the key stages in Risk Management procedure is risk analysis where you can quantify the impact of risk either qualitatively or quantitatively.

If qualitative risk analysis is to be used to predict the probability of occurrence of a particular risk, describe what would be the best way of implementing the analysis.

[10 marks]

3. The big challenge in creating tomorrow is not about predicting tomorrow as there is no single future out there waiting to happen. The challenge is not to predict which of those potential futures will actually materialize; instead, the goal is to try and imagine a future that is plausible through change and harnessing the discontinuities that drives change as it is about the only constant in today's highly competitive business environment.

In implementing change, it is therefore important for managers and supervisors to be prepared for resistance to change at any level and find reasons that often lie behind these resistances.

Explain in detail any **FIVE (5)** approaches to deal with resistance to change, both from the management and the employee points of view.

[20 marks]

4. In reviewing the structure of a company, reengineering is about the biggest investment the company can make and should not be taken unless it is absolutely necessary as it involves restructuring the company from scratch regardless of existing structure and concepts.

a) Explain your understanding on the term “reengineering” and how planning is used to remove inefficiencies buried in the existing structure.

[10 marks]

b) Why is strategic management so important towards the success of a business?

[10 marks]

5. Sustainable development is the process of moving human activities to a pattern that can be sustained in perpetuity.

a) Explain the concept of sustainable development in engineering and how sustainability is described.

[10 marks]

b) Illustrate the mechanism and processes needed to strengthen the effectiveness of sustainable development strategies towards achieving the vision, goals and objectives of the organization.

[10 marks]

6. In the new millennium, engineering managers must be prepared to lead and manage technology interactive companies and industries successfully.

a) Discuss any **FIVE (5)** activities and technologies that engineering managers should pay attention to achieve the above scenario.

[10 marks]

b) Discuss any **FIVE (5)** factors that must be considered to improve the likelihood that projects implemented are both relevant and sustainable.

[10 marks]

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