



First Semester Examination  
2017/2018 Academic Session

January 2018

**EUP501 – Engineering Management**

Duration : 2 hours

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Please check that this examination paper consists of THREE (3) pages of printed materials before you start answering the question.

**Instructions** : Answer all **FOUR (4)** questions.

All questions must be answered in English.

Each question **MUST BE** answered on a new page.

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1. In 2011, the tsunami triggered the nuclear disaster in Fukushima, Japan, causing serious power supply shortages and unequal electricity distributions throughout the whole country. The Japanese government wanted to reduce national energy consumption by encouraging the installation of solar systems.

Given the financial supports from the Japanese government, many companies started to invest in the solar-related business. The biggest floating plant, in terms of output, is located at Yamakura Dam in Chiba prefecture, east of Tokyo and more solar power plants are being built on water. Kyocera Corporation, with its floating plant could generate up to 20 percent more energy than a typical system energy.

Indeed, engineers and scientists worldwide are leading the responsibility to handle one of the largest challenges society faces, and they have the unique opportunity to make a bigger impact on the environment. Green engineering provides the tools, techniques and technologies to foster this innovation.

- (a) Based on the scenario of green technology development obtained from the above article, you are requested to develop an action plan for an organisation, outlining the steps of conducting an action-based research that are relevant to this scenario. Your action plan should also consider resources allocation to propose more sustainable practices for improving the adoption of green technology.
- (b) Many mega infrastructure projects around the world have experienced time and cost overrun prior to project commissioning even though various mitigation measures have been taken prior to the construction.

Determine:

- (i) risks or problems-associated that lead towards the cost overrun;
- (ii) how these risks or problems have been mitigated in real project practice; and
- (iii) the potential implications of cost overrun towards the overall project planning.

[25 marks]

2. Quality is one of the key fundamental elements for a successful project management. However, the main quality focussed by most construction practitioners has been directed at the pre-construction stage and not the post-construction stage.

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Determine:

- (i) what are the associated risks to quality of construction;
- (ii) how these risks can be mitigated in the real project practice;and
- (iii) implication of these risks towards the overall project delivery.

[25 marks]

3. Many organizations fail or do not move forward as managers failed to realize the effective design of strategic planning.

- (a) State **FIVE (5)** major questions and its effective answers that managers should be able to realize the design of the organizations' strategic management.

[15 marks]

- (b) In establishing a grand strategy to move forward, one of the tools normally used is SWOT analysis.

Explain your understanding of the SWOT analysis normally used to establish a grand strategy of an organization.

[10 marks]

4. (a) When a company needs to re-engineer itself, the most important thing to do is planning it out and make sure it is really needed.

Explain in detail your understanding of re-engineering and what does it take to carry out re-engineering.

[10 marks]

- (b) Describe in detail the most important factor in re-engineering success.

[15 marks]

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