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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2016/2017**

COURSE NAME : ENGINEERS AND SOCIETY
COURSE CODE : BEE 10202
PROGRAMME : BEJ / BEV
EXAMINATION DATE : DECEMBER 2016 / JANUARY 2017
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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THIS PAPER CONSISTS OF FIVE (5) PAGES

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Q1 Engineers are often delegated with the responsibility of implementing large-scale projects involving millions of ringgit. In view of the large amount of money changing hands, the integrity, ethical standards and moral dilemma of engineers are being put to test.

(a) Identify **SIX (6)** unethical concerns that may occur in engineering profession from the above statement.

(6 marks)

(b) Apply **THREE (3)** solutions to solve the corruption issue in the above statement.

(9 marks)

(c) Conflicts of professional interest frequently arise in the working environment of an engineer. Recommend **FIVE (5)** appropriate solutions to overcome the problems.

(5 marks)

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Q2 (a) Energy Commission (EC) is established under the Energy Commission Act 2001, which is responsible as a regulatory agency for electricity and piped gas supply industries in Peninsular Malaysia and Sabah. In addition to the functions prescribed under the electricity and the gas supply act, list **FIVE (5)** other functions of EC.

(5 marks)

(b) Based on the Code of Professional Conduct of Board of Engineers Malaysia (BEM), analyze the following statements with an appropriate example:

(i) A registered engineer shall at all times hold paramount the safety, health and welfare of the public,

(3 marks)

(ii) A registered engineer shall undertake assignments only if he/she is qualified by education and experience in the specific technical fields in which he is involved; and

(3 marks)

(iii) A registered engineer shall issue public statements only in an objective and truthful manner.

(3 marks)

(c) Health and Safety Committee (HSC) plays a vital role in preventing work-related injuries and diseases and is also know as an internal responsibility system. This system, based on cooperation between employers and employees, improves on overall understanding of occupational health and safety issues in the workplace. Plan a suitable procedure that need to be implemented by the HSC in order to prevent safety issues from happening in the workplace.

(6 marks)

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Q3 (a) The Occupational Safety and Health Act of 1970 created Occupational Safety and Health Administration (OSHA), which sets and enforces protective workplace safety and health standards. There are OSHA standards for construction, agriculture, maritime and general industry. Compare and contrast between the responsibilities of an employer and an employee under the OSHA Act.

(10 marks)

(b) Define what is whistle blowing? Characterise **FOUR (4)** main features of whistle blowing. Malcom a military analyst engineer employed by RAND corporation has decided to be a whistler blower for some electronic projects where he was the team leader. What are the necessary guidelines that he must followed when Malcom has decided to be a whistler blower?

(10 marks)

Q4 (a) The 2016 World Economic Forum has singled out ten key global challenges that require cooperation from the public and private sectors. One of this ten key challenges is gender equality. Achieving gender equality is not just a moral issue. Equality between men and women in all aspects of life, from access to health and education to political power and earning potential, is fundamental to whether and how societies thrive. Demonstrate the importance of gender equality in order to increase the awareness of equal opportunity.

(10 marks)

(b) Hazardous management is one of the roles of the Environmental, Health and Safety Policy Committee in UTHM. In accordance to this policies; students, faculty, staff, administrators, visitors, and guests have the responsibilities for complying, implementing, communicating and/or ensuring adherence to environmental, health and safety regulations, principles and practices. With a suitable example:

(i) Explain the meaning of hazard analysis, and;

(2 marks)

(ii) Analyze how hazard analysis can be performed.

(8 marks)

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Q5 “Risks to humans from environmental damage through technology, include inhalation of dangerous chemicals in air pollution, contamination of water and food sources, and risk of infections and diseases through exposure to toxic wastes. Flora and fauna risk habitat loss or disruption and extinction of species through exposure to dangerous by products of technology. Greenhouse gases affect atmosphere and weather systems, causing global warming and chlorofluorocarbons that deplete the Earth's ozone layer. Technology consumes resources which are not necessarily renewable, including living resources, such as forests and populations of fish, and inanimate resources, such as natural chemicals and minerals.”

(a) Based on the above paragraph:

(i) Explain the meaning of “Sustainable Development”.

(4 marks)

(ii) Analyze how engineer could help in this situation for sustainable development.

(6 marks)

(b) Engineers should not only inform the society about the impact of technology, but also cooperate with all stakeholders to improve the quality of our future life. With the aid of environmental ethics, formulate an idea to educate the young generation to appreciate, commit and be responsible towards the environment.

(10 marks)

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- END OF QUESTIONS -