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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2018/2019**

COURSE NAME : MANAGEMENT AND PROFESSIONAL ETHICS
COURSE CODE : BDU 20503
PROGRAMME CODE : 2 BDC / 2 BDM
EXAMINATION DATE : JUNE / JULY 2019
DURATION : 3 HOURS
INSTRUCTION : ANSWERS FIVE (5) QUESTIONS ONLY FROM SIX (6) QUESTIONS PROVIDED

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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Q1 In the early 1970s, Bay Area Rapid Transit (BART) system in the San Francisco Bay Metropolitan Area project is near to accomplish. The BART was highly innovative, utilizing a highly automated train system with no direct human control of the trains. In 1972, three engineers were fired from the company for insubordination. They were concerned about the safety of the automated control system and were not at all satisfied with the test procedure used by Westinghouse; the contractor for BART train controls. The engineers conveyed their concerns to a board member anonymously. However the problem was leaked to the press. They subsequently sued BART, and were aided by American Society of Civil Engineers which contended that they were performing their ethical duties as engineers to protect the safety of the public.

- (a) Ethics is generally understood as the discipline or field of study dealing with moral duty or obligations. Briefly discuss the importance to study ethics. (4 marks)
- (b) Choose THREE (3) code of ethics that listed by American Society of Civil Engineers that were involved in the said Case Study. (6 marks)
- (c) Based on the guideline from Board of Engineer Malaysia (BEM)'s code of ethics (DO's and DON'Ts), explain the relevant best practiced which can be used to analyse the case. (10 marks)

Q2 Fattah Amin is a principal or employee of a consulting engineering firm which does an extensive amount of design work for private developers. The engineers are involved in recommending to the developers a list of contractors and suppliers to be considered for selection on a bidding list for construction of the projects. Usually, the contractors and suppliers recommended by the engineers for the selected bidding list obtain most of the contracts from the developers. Over a period of years the officers of the contractors or suppliers developed a close business and personal relationship with the engineers of the firm. From time to time, at holidays or on birthdays of the engineers with whom they dealt, the contractors and suppliers would give Fattah Amin personal gifts of substantial value, such as home furnishings, recreational equipment, gardening equipment.

- (a) Identify THREE (3) fundamental canons involved in the said case study. (6 marks)
- (b) Distinguish FIVE (5) rules of practice from the selected fundamentals canon which can be used to solve the case. (10 marks)
- (c) An engineering professional's work demands that the technological solutions designed to solve practical problems of society are addressing the safety, health and welfare of the public. Briefly describe FOUR (4) responsibilities of an engineer. (4 marks)

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Q3 Azlan is a field Engineer employed by a consulting environmental engineering firm. Under the supervision of his supervisor Kamil, Azlan samples the contents of drums located on the property of a client. Based on Azlan's past experience, it is his opinion that analysis of the sample would most likely determine that the drum contents would be classified as hazardous waste. If the material is hazardous waste, Azlan knows that certain steps would legally have to be taken to transport and properly dispose of the drum including notifying the proper federal and state authorities. Unfortunately, Kamil tells Azlan to only document the existence of the samples without having to classify it first.

- (a) If you were Azlan, indicate TWO (2) professional rights as an engineer to solve this case. (4 marks)
- (b) State FIVE (5) examples on the selected professional rights you choose in Q3 (a). (10 marks)
- (c) Engineers must perform under a standard of professional behaviour that requires adherence to the highest principles of ethical conduct. Describe the professionalism that engineer should have. (6 marks)

Q4 John Doe is the city engineer of a municipality. His duties include reviewing plans and specifications prepared for developers of housing projects, and make recommendations to the city council on approval of such projects. Doe's wife has invested in one of the development companies operating in the jurisdiction of the city, and plans for one of its projects to be reviewed by him and approved by the city council. His wife's investment in the project was not known to the city officials or the public until after his review, recommendation for approval of the project and the approval of the city council. When the fact of his wife's investment was disclosed at a later date, Doe was requested to resign his position on the ground of unethical conduct.

- (a) Analyse the major moral/ethical issues involved in the case study and interpret THREE (3) types of condition related. (10 marks)
- (b) Briefly explain THREE (3) solutions how engineers can avoid this ethical issues. (6 marks)
- (c) State FOUR (4) examples of situation that can be justified as a major ethical issues you choose in Q4 (a). (4 marks)

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- Q5** Technology management is a set of management disciplines that allows organizations to manage their technological fundamentals to create competitive advantage.
- (a) Discuss management technology according to Henri Fayol (1949). (8 marks)
 - (b) Technology management is an integrated interdisciplinary field that allows organizations to improve their efficiency, productivity, growth and creation of more and better jobs. Illustrate the interdisciplinary fields' integration. (6 marks)
 - (c) In a multinational company, normally there are various managerial positions such as Marketing Manager, Safety Manager and Engineering Manager. Those managers play important roles to ensure the company meets their mission and vision. Distinguish THREE (3) differences of Engineering Manager with other managers. (6 marks)
- Q6** The Technology Life Cycle (TLC) is an important tool for production or manufacturing product. The typical life-cycle of a manufacturing process or production system from the stages of its initial conception to its culmination as either a technique or procedure of common practice or to its demise.
- (a) State THREE (3) benefits of technology life cycle. (6 marks)
 - (b) The technology transfer process usually involves moving a technological innovation from research and development organization to a receptor organization. Illustrates the technology transfer process. (10 marks)
 - (c) Science, technology and innovation each represent a successively larger category of activities which are highly interdependent but distinct. Differentiate FOUR (4) differences of science and technology. (4 marks)

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