

CONFIDENTIAL



UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2020/2021**

COURSE NAME : MANAGEMENT AND PROFESSIONAL ETHICS
COURSE CODE : BDU 20503
PROGRAMME CODE : BDC / BDM
EXAMINATION DATE : JULY 2021
DURATION : 3 HOURS
INSTRUCTION : ANSWERS FIVE (5) QUESTIONS ONLY

TERBUKA

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

CONFIDENTIAL

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 of study ethics. (4 marks)
- (b) Choose THREE (3) code of ethics that listed by Malaysia Board of Technologist that are involved in the said Case Study. (6 marks)
- (c) Based on the guideline from American Society of Civil Engineers, explain FIVE (5) relevant rule of practices which can be used to analyse the case. (10 marks)

Q2 Shafiq 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 Shafiq 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) Professional engineering work demands the technological solutions 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)

TERBUKA

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) Appraise 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 Hanna was a civil engineer in one of four private practices in a medium-sized town in a rural area of the province. A nearby village awarded her a design contract for several kilometres of curb and gutter on the main street, including extension of the existing storm sewer. The contract involved four stages: designing the modifications, preparing construction specifications, evaluating the contractors' bids, and providing field inspection services during the construction. Hanna undertook the design and prepared the contract documents. However, when the village advertised for bids, Hanna told the Village Clerk she had a financial interest in one of five small construction companies in the area and that she would like her company to bid on the construction, as well. She suggested to the Clerk that the village should engage another engineer to evaluate the bids and if Hanna's company was successful, the new engineer would then provide field inspection services, too.

(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) Appraise FOUR (4) examples of situation that can be justified as a major ethical issues you choose in **Q4 (a)**.

(4 marks)

TERBUKA

- 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 between science and technology. (4 marks)

-END OF QUESTIONS -

TERBUKA