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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

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

COURSE NAME : ENGINEERS AND SOCIETY  
COURSE CODE : BNR 42702  
PROGRAMME CODE : BND / BNE / BNF  
EXAMINATION DATE : DECEMBER 2016 / JANUARY 2017  
DURATION : 2 HOURS 30 MINUTES  
INSTRUCTION : ANSWERS ALL QUESTIONS

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

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- Q1** (a) Define the meaning of *science, engineering, and technology*. (3 marks)
- (b) Based on the technological spectrum given in **Figure Q1(b)**, describe the job scope of an engineer and an engineering technologist. (5 marks)
- (c) An engineering technologist may apply to be a Professional Technologist (P.Tech) via Malaysian Board of Technologist (MBOT) or a Professional Engineer (P.E.) via Board of Engineers Malaysia (BEM). Demonstrate each of the route by illustration and accompanied by brief explanation. (12 marks)
- Q2** (a) A moral dilemma is a conflict in which an engineer or engineering technologist may face while working in the industries.
- (i) Define *moral dilemmas*. (4 marks)
- (ii) Give example of a situation where moral dilemma may occur. (4 marks)
- (b) Describe the importance of engineering ethics. (6 marks)
- (c) Explain differences between things that can be protected under copyright and cannot be protected under copyright. (6 marks)
- Q3** (a) A 25-year-old engineering technologist of Company ABC was found dead from an epileptic fit after a completion of a 2-months production project in Kuala Lumpur which sparked widespread allegations of excessive working hours within the manufacturing sector. Colleagues of Mohd Ali reported that he had repeatedly worked throughout the night (up to four times each week in the whole 2-months duration). The engineer's parents confirmed that they received messages from their son at 5am, indicating to them that he was working throughout the night. The company has responded with commitments to investigate staff working hours, but has admitted that the company has no system in place for monitoring the issue.
- (i) Based on Malaysian Employment Act 1955, demonstrate the rights that Mohd Ali were entitled to in terms of working hours. (10 marks)



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- (ii) Describe the exceptional conditions where an employee may be needed to work overtime or work on a rest day according to Malaysian Employment Act 1955. (6 marks)
- (b) Explain how stress can affect the behavior of an employee/employer. (4 marks)
- Q4** (a) State **THREE (3)** characteristics of good teamwork and bad teamwork. (6 marks)
- (b) Briefly explain the **EIGHT (8)** steps of ethical reasoning. (8 marks)
- (c) Engineers as professionals also have special rights arise from their professional role. Discuss briefly on the professional rights for an engineer. (6 marks)
- Q5** (a) Mr. Hindin worked for Hewlett-Packard as production manager and manufacturing engineer for eight years before being wrongfully terminated in 1997. HP sold medical equipments the company knew were defective or failed at a higher than expected rate to the Department of Veterans Affairs and the Department of Defense. This included patient monitors, oxygen monitors (known as pulse oximeters) and equipment to monitor anesthesia. Mr. Hindin first uncovered HP's improper practices and repeated life-threatening failures of HP products in 1996 and attempted to persuade HP management to respond to the problems, even going so far as to write to HP's president. After complaining about the defective products to his superiors and later informing HP that he had notified Food and Drug Administration (FDA) of the problems, Hindin was harassed and shunted aside. He was terminated in 1997.
- (i) Identify and define the action that Mr. Hindin has taken to expose the wrongdoings of his employer. (4 marks)
- (ii) Apply engineering ethics and discuss the obligations that motivated Mr. Hindin to report the issue although he was losing his job. (10 marks)
- (b) Engineers and engineering technologists are often entrusted with the responsibility of implementing large-scale projects involving millions of Ringgit. In view of the large amount of money changing hands, the integrity and ethical standards of engineers are being put to test. Describe the measures that can be taken by an engineer/engineering technologist to prevent corruption and unethical practice of cutting corners in order to safeguard the good image of the engineering profession. (6 marks)

**-END OF QUESTIONS -**

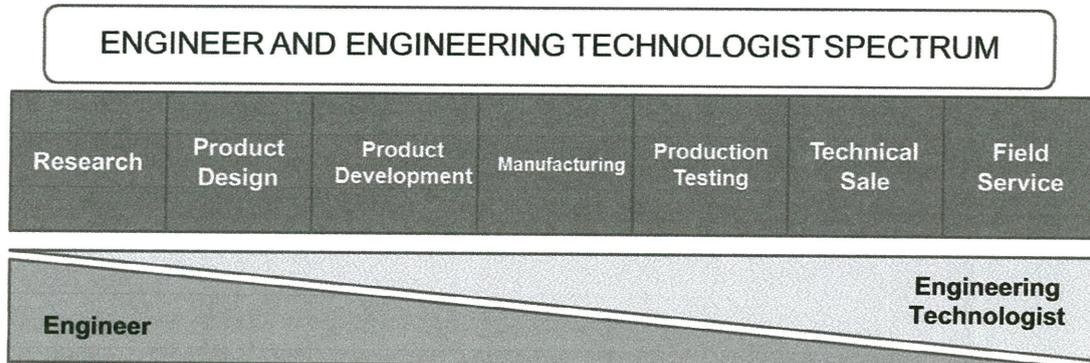
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**Figure Q1(b)**

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FACULTY OF ENGINEERING  
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