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Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2013/2014**

COURSE NAME : ENGINEER AND SOCIETY
COURSE CODE : BFC 32202
PROGRAMME : 3 BFF
EXAMINATION DATE : JUNE 2014
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTION

THIS PAPER CONSISTS OF **THREE (3)** PAGES

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- Q1** (a) In the construction sector, two types of engineers will be appointed by the promoter, namely Resident Engineer and Project Engineer. List and briefly explain **FOUR (4)** major differences in their responsibility between the two. (8 marks)
- (b) In 1998, Malaysian's greatest achievement in the development of our country was the completion of the Kuala Lumpur International Airport (KLIA), which was the largest and modern airport in Asia.
- (i) State briefly **THREE (3)** engineers achievements in the design and construction of the KLIA. (6 marks)
- (ii) Briefly explain **THREE (3)** significant contributions of KLIA towards the betterment of welfare and quality of life of Malaysians, and national economic development of the country. (6 marks)
- Q2** (a) Board of Engineers Malaysia (BEM) and The Institution of Engineers Malaysia (IEM) plays significant role in the development of engineering profession in our country. Describe **TWO (2)** different organizational function of both organizations and show the relationship between them. (6 marks)
- (b) Describe the necessary steps for a graduate engineer to register as a Professional Engineer (PE). (6 marks)
- (c) Engineering profession are said to save more life than medical profession. Discuss the validity of these statements. (8 marks)
- Q3** (a) As professional figure, engineers are expected to behave in an ethical manner. Explain briefly the meanings of etiquette, morals, ethics and law, and give **ONE (1)** example for each of the interaction rules. (8 marks)
- (b) *“A professional's decisions are assumed to be on behalf of the client and to be independent of self-interest”.*
- Explain briefly in your own words the meaning of true professionalism characteristics. (4 marks)

- (c) Increase in the world population will cause many problems and engineers have to face many challenges to overcome these problems. State **FOUR (4)** problems that would arouse and explain the challenge and solution to overcome each of those problems.

(8 marks)

- Q4** (a) Technology transfer is the acquisition and adaptation of production techniques from one country or firm to another and its application in a local production process. Base on your opinion, what are the reasons for countries to practice technology transfer and state its drawback.

(6 marks)

- (b) Describe **TWO (2)** basic types of intellectual properties.

(4 marks)

- (c) Performing research and development (R&D) activities is one important way in where engineers provide significant contribution to society. Define research and development.

(4 marks)

- (d) List **TWO (2)** responsibilities in which engineers are expected to uphold whenever they participate in research and development activities.

(2 marks)

- (e) Give an example of potential application of nanotechnology in civil engineering.

(4 marks)

- Q5** (a) To meet future challenges of sustaining the well being of world population, a breed of well-rounded engineer must be prepared by related educational institution. List all the necessary attributes of future engineer that must be constitute in an engineering program curriculum.

(10 marks)

- (b) A sustainable development is the development that illustrates a successful balance between physical development and the conservation of the environment. Give your suggestion on **FIVE (5)** main socio-economic-environment guidelines that you think have to be established to ensure these balance.

(10 marks)

- END OF QUESTION -