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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2017/2018**

COURSE NAME : ENGINEERS AND SOCIETY  
COURSE CODE : BFC 32202  
PROGRAMME : BFF  
DATE : JUNE / JULY 2018  
DURATION : 2 HOURS  
INSTRUCTION : ANSWER **THREE (3)** QUESTIONS ONLY

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

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**Q1** (a) State the importance of a Code of Ethics for engineers and their organisations.

(3 marks)

(b) One of the most important duties of a civil engineer is to design and construct structures that are safe for public use. Specify **FIVE (5)** criteria that must be followed by civil engineers to ensure safe designs.

(10 marks)

(c) A fresh graduate civil engineer may face a dilemma in choosing to work either in a government agency or a private engineering firm. Outline **FOUR (4)** benefits of working in the public sector.

(12 marks)

**Q2** (a) List **FIVE (5)** negative impacts of buildings and the construction of buildings on our environment.

(5 marks)

(b) A responsible engineer should not only abide by the code of ethics and laws for environmental protection, but also contribute their services to the following global initiatives that advocate the protection of the environment. Compare the functions of these initiatives:

- (i) Intergovernmental Panel on Climate Change (IPCC)
- (ii) United Nations Environment Programme (UNEP)
- (iii) Earth System Governance Project (ESGP)
- (iv) Global Environment Facility (GEF)

(8 marks)

(c) The “CERES Principles” is an exemplary set of ten principles for protecting the environment. Many organisations have adopted these principles as part of their code of corporate environmental ideals. Identify and discuss **FOUR (4)** “CERES Principles” that are related to the engineering profession.

(12 marks)

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- Q3**
- (a) Provide the job description of a research and development (R&D) engineer.  
(5 marks)
  - (b) Differentiate between Fundamental Research and Applied Research.  
(10 marks)
  - (c) Identify key areas where interest in R&D is expected to grow rapidly and explain the role of engineers in fulfilling the need for R&D.  
(10 marks)
- Q4**
- (a) Many engineers have become leaders in the corporate world. It was reported that 33% of Chief Executive Officers (CEOs) of leading companies listed on Standard & Poor's 500 Index (S&P 500) are actually qualified engineers. Correlate the similarities of engineers and corporate leaders in terms of their skills.  
(10 marks)
  - (b) In the last century, we have witnessed some of the most remarkable engineering achievements. However, as we move into the new century, we are faced with many global challenges. Engineers play an important role in seeking ways to put knowledge into practice to meet these challenges. Outline **FIVE (5)** global challenges that civil engineers must overcome.  
(15 marks)

– END OF QUESTIONS –

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