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UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020**

COURSE NAME : ENGINEERS AND SOCIETY
COURSE CODE : BFC32202
PROGRAMME CODE : BFF
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 2 HOURS
INSTRUCTION : ANSWER **ALL** QUESTIONS IN PART A
ANSWER **TWO (2)** QUESTIONS IN
PART B
DO NOT BRING THIS QUESTION
PAPER OUT OF THIS EXAMINATION
HALL.

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

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PART A

- Q1** (a) State **FIVE (5)** sub-disciplines in civil engineering.
(5 marks)
- (b) Explain briefly **TWO (2)** responsibilities in which engineers are expected to uphold whenever they participate in research and development activities.
(4 marks)
- (c) Most communities are discussing about green buildings and sustainability. Describe **THREE (3)** benefits of these initiatives to the world.
(6 marks)
- (d) Based on the current trends of borderless and open world approach, countries and its population are living as one. Discuss the positive impacts of globalization.
(10 marks)
- Q2** (a) Explain briefly the **FOUR (4)** main elements for interactions of behavior as introduced in the engineering profession.
(8 marks)
- (b) Engineers are responsible in ensuring the well-being and progress of a project. Describe the **FOUR (4)** main roles of engineers in relation to civil engineering field.
(8 marks)
- (c) 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. In your opinion,
- (i) What are the reasons for countries to practice technology transfer program?
(4 marks)
- (ii) State the drawbacks of the initiative.
(5 marks)

PART B

- Q3** (a) State and explain briefly the differences between the **THREE (3)** types of companies that engineers are to work with when they are employed.
(6 marks)
- (b) Describe the **SIX (6)** elements in The CERES principles, its importance to engineers and the environment.
(9 marks)
- (c) Discuss the **FIVE (5)** new skill sets required for engineers in the 21st century.
(10 marks)
- Q4** (a) Explain briefly **THREE (3)** different types of volume of end-product dependent production cycle.
(6 marks)
- (b) Give **TWO (2)** examples of potential application of nanotechnology which civil engineer can explore.
(4 marks)
- (c) At present, most scientist, engineers and researchers are focusing on eight key areas for research and development. Explain clearly **FIVE (5)** key areas with example.
(15 marks)
- Q5** (a) Explain clearly **FOUR (4)** the role of specialized personnel and research staff in contributing ideas for research and development activities.
(8 marks)
- (b) Differentiate the roles and functions of scientists, technicians and engineers.
(7 marks)
- (c) Based on your observations, determine and describe **FIVE (5)** factors that may influence interactions between government agencies, universities and industries.
(10 marks)

-END OF QUESTIONS-