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Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
(ONLINE)
SEMESTER II
SESI 2019/2020**

COURSE NAME : ENGINEERS & SOCIETY
COURSE CODE : BFC32202
PROGRAMME : BFF
DATE OF EXAMINATION : JULY 2020
DURATION : 4 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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

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TERBUKA

- Q1** (a) Engineers play a critical role in innovation and this is a key driver in today's engineering world and also in improving society. Please list **THREE (3)** important points that show how engineers can become good players as innovators.
(6 marks)
- (b) Nowadays, research has become a priority in any job. The main purpose of research is to inform action and contribute to developing knowledge in a field or study. List **FOUR (4)** significances of doing research.
(4 marks)
- (c) Nowadays, a Fourth Industrial Revolution 4.0 (IR 4.0) for the construction industry is gaining more interest. With an explanation, recommend a potential application of IR 4.0 in any construction industry.
(15 marks)
- Q2** (a) Research and development (R&D) refers to innovative activities undertaken by corporations or governments in developing new services or products, or improving existing services or products. Analyse **FIVE (5)** benefits of Research and Development (R&D).
(10 marks)
- (b) One of those career possibilities for engineers includes becoming an entrepreneur. Engineers can become good entrepreneurs or corporate leaders due to the similarities in terms of acquired skills. Please describe **FIVE (5)** acquired skills needed to become an entrepreneur.
(15 marks)
- Q3** (a) Explain briefly **TWO (2)** reasons why the relationship between engineers and the environment is complex.
(10 marks)
- (b) Environmental law means the laws that regulate the impact of human activities on the environment, which covers a broad range of activities that affect air, water, land, flora, or fauna. It includes laws that relate to land use and development, pollution, waste management, climate change, emissions, and water resource management. Conclude **SIX (6)** general functions of most environmental laws.
(15 marks)

- Q4** (a) From the book by Fleddermann, C.B., stated Ethics is the study of the characteristics of morals, and involves the moral choices made by individuals as they interact with other persons. Engineers need to be aware of ethics as they make choices during their professional practice of engineering. Engineering ethics will be defined as the rules and standards governing the conduct of engineers in their roles as professionals. please state what is the advantage and the disadvantage of this code of ethics to the engineers.
(10 marks)
- (b) Engineers play a key role in providing development that can improve the quality of life for society as whole. Please state the responsible of engineers and list the environmental damage that effected from the development.
(15 marks)

-END OF QUESTIONS-

