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Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
(ONLINE)  
SEMESTER II  
SESSION 2020/2021**

COURSE NAME : BUILDING INFRASTRUCTURE  
COURSE CODE : BFR 31903  
PROGRAMME CODE : BFR  
EXAMINATION DATE : JULY 2021  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER **FOUR (4)** QUESTIONS ONLY

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

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**TERBUKA**

- Q1** (a) As an Architect for a new building development, identify **FIVE (5)** types of infrastructures that you may consider to provide facilities to the building. (5 marks)
- (b) Your appointment as an Architect involves a task to design a row of 7 terrace shop lots. Meanwhile, the nearest road at the front of your site is a 24m (60') width road. By using sketches, show how you shall design the access road to your shop lots. (8 marks)
- (c) An owner of a house which is located on a higher land besides his neighbour's house is seeking your advice as an Architect. There is a stream flowing across both lands, which both owners use to discharge their surface water drainage.
- Recently, during heavy rain, he realizes that the water discharged from his land into the stream has caused his neighbour's land to flood. By using sketches, show him what he can do on his land to avoid the flooding problem from happening again. (12 marks)

- Q2** (a) Electrical power is an important facility for a new development. Based on your understanding, name **FIVE (5)** components of Electric Grid that are linked to each other in delivering the electrical power to the development. (5 marks)
- (b) There are two stages of installing a fully solar energy based building. The first stage is the design process and the second stage is the process of obtaining approval from Tenaga Nasional Berhad (TNB). Explain both stages of the work process. (12 marks)
- (c) 5G is the fifth generation cellular network technology. Recently, Malaysia has announced to enter this infrastructure technology in providing faster networking systems in the country. Explain how does this technology may be applied to give benefit in the architecture and construction industry. (8 marks)

- Q3** (a) The process of distributing treated water to the consumer is called the Water Distribution System. List down **TWO (2)** methods of Water Distribution to consumers and its advantages and disadvantages. (5 marks)
- (b) *7 types of*  
There are several types of Water Distribution Network classifications. Explain and illustrate the **FOUR (4)** types of Water Distribution Network. (8 marks)

- (c) Drinking water sources are subject to contamination and require appropriate treatment to remove disease-causing agents. List down and illustrate briefly of **FOUR (4)** most common steps in water treatment used by community water systems

(12 marks)

- Q4** (a) The combined effects of population explosion and changing modern living standard have had a cumulative effect in the generation of a large amount of various types of wastes. List down and explain briefly **FIVE (5)** types of Solid Waste.

(5 marks)

- (b) Waste production can be minimized by adopting the 3 R's principle. List down and explain the 3 'R' of solid waste management.

(8 marks)

- (c) In an era of rapid technological advancement, more and more highly sophisticated electronic goods are being invented and manufactured.

- (i) Define E-waste and list down the common e-waste items.  
(ii) Determine the E-waste problems and how does the E-waste risk the environment.

(12 marks)

– END OF QUESTIONS –