

CONFIDENTIAL



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESI 2021/2022**

COURSE NAME : BUILDING INFRASTRUCTURE
COURSE CODE : BFR 31903
PROGRAMME CODE : BFR
EXAMINATION DATE : JULY 2022
DURATION : 3 HOURS
INSTRUCTION

1. ANSWER ALL QUESTIONS.
2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK**.
3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

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

CONFIDENTIAL

TERBUKA

Q1 (a) As a Project Manager for a new building development, identify **FIVE (5)** types of infrastructures that you may consider providing facilities to the building
(5 marks)

(b) Your appointment as an assistant architect involve in designing a row of terrace shop lots with the nearest road at the front of your site is a 24m (60') width. With aid of illustration, design the access road to the shop lots.
(8 marks)

(c) An owner of a house which located on a higher land besides his neighbour's house is seeking your advice as an assistant architect. There is a stream flowing across both lands, which both owner use it to discharge their surface water drainage.

During heavy rain recently, he realizes that the water discharged from his land into the stream has caused his neighbour's land to flood. Illustrate with annotation 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 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 system in the country. Describe how does this technology may be applied to give benefit in architecture and construction industry.
(8 marks)

TERBUKA

- Q3** (a) The process of distributing treated water to the consumer is called Water Distribution System. List down **TWO (2)** methods of Water Distribution to consumer and its advantages and disadvantages. (5 marks)
- (b) There are **FOUR (4)** types of Water Distribution Network classifications. Explain with illustrations 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 with sketches **FOUR (4)** most common steps in water treatment used by community water system. (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 **FIVE (5)** types of Solid Waste. (5 marks)
- (b) Waste production can be minimized by adopting the 3 R's principle. Explain the 3 'R' of solid waste management. (8 marks)
- (c) In an era of rapid technological advancement, more and more highly sophisticate electronic goods are being invented and manufactured.
- (i) Identify E-waste and list down the common e-waste items (2 marks)
- (ii) Evaluate the E-waste impact to the environment (10 marks)

– END OF QUESTIONS –

TERBUKA