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Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

- COURSE NAME : CONSTRUCTION ENGINEERING
- COURSE CODE : BFC 21002
- PROGRAMME CODE : BFF
- EXAMINATION DATE : JULY 2022
- DURATION : 2 HOURS
- INSTRUCTION
1. ANSWER ALL QUESTIONS
 2. THIS FINAL EXAMINATION IS AN **ONLINE ASSESSMENT AND 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 SEVEN (7) PAGES

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TERBUKA

- Q3** (a) The floor slab usually refers to a slab that has been formed using concrete and generally steel reinforcement and may form part of the structure of a building. It may form the slab of a basement, at ground level or at upper levels. Therefore, a slab is an important structural element that is constructed to create a flat and useful surface which can be categorized into the suspended and non-suspended slabs. With the aid of sketches, classify the construction procedures and **THREE (3)** criteria of these two different types of slabs.
(15 marks)
- (b) Mr. Farid is a building contractor plans to build his own house in the main town of Batu Pahat. As a designer he asks you to design a modern style double-storey bungalow with 5 bedrooms, 2 washrooms, 2 living rooms and a kitchen with a minimal budget. With the aid of sketch, you have to choose the suitable types of walls and roof for the whole building and justify your selections.
(10 marks)
- Q4** (a) Infrastructure refers to the basic facilities and systems that help society function and to fulfil the basic livelihood of citizens and businesses. Therefore, in one part, road infrastructure plays a crucial role by providing mobility for efficient movements, as well as providing access to economic and social activities. List **FIVE (5)** design criteria for road infrastructure.
(5 marks)
- (b) In Malaysia, landslides are among the deadly hazards which occur quite frequently during the rainy seasons. Undeniable, in some cases, landslides occur as a consequence of flawed design, improper construction and non-maintenance of slopes which correlates with human errors. By referring to the Landslide area in Kemensah Heights (Resource: Bernama, 2021), **Figure Q4**.
- (i) Identify **FIVE (5)** factors need to be considered when designing a retaining wall.
(10 marks)
- (ii) With the aid of a sketch, identify **TWO (2)** types of retaining wall as an engineering solution to minimize the risk and avoid the scenario from happening and justify your answer.
(10 marks)

– END OF QUESTIONS –

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TABLE 1

Chainage (meter)	Original Ground Level (OGL)	Formation Level (FL)	Side Slope Gradient (Horizontal : Vertical)
0	70.50	65.0	2:1
30	69.30		2:1
60	71.40		2:1
90	74.0		2:1
120	75.10		2:1
150	73.50		2:1

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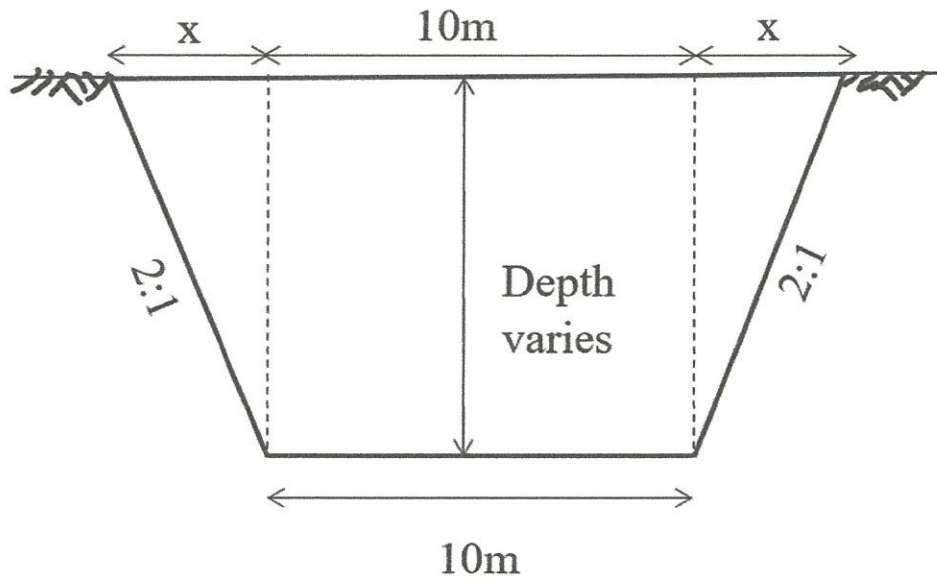


FIGURE Q1(b)

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FIGURE Q2

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Swimming
pool



FIGURE Q4

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