



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024

- COURSE NAME : CONSTRUCTION TECHNOLOGY I
- COURSE CODE : BPD 13103
- PROGRAMME CODE : BPC
- EXAMINATION DATE : JULY 2024
- DURATION : 3 HOURS
- INSTRUCTIONS :
1. ANSWER ALL QUESTIONS
 2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 - Open book
 - 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

Q1 A slab refers to a flat, horizontal structural component typically made of concrete, although it can also be constructed from other materials such as steel or wood. A solid slab is a continuous, monolithic slab of concrete that spans between supports such as beams or walls.

(a) Explain **FOUR (4)** advantages of a solid slab compared to a suspension slab at the ground level of a building.

(8 marks)

(b) Illustrate a complete construction process of a solid slab for a 30-storey building with the aids of sketches.

(16 marks)

Q2 Building framework generally refers to the structural system or framework of a building that provides support and stability to the entire structure. It is the skeleton of the building upon which the various architectural and functional elements are built. The framework typically includes components such as beams and columns. The building framework forms the structural backbone of a building and is essential for ensuring its strength, stability, and safety throughout its lifespan. It is designed to withstand various loads and forces while providing support for the architectural and functional elements of the building.

(a) Differentiate **THREE (3)** differences between a column and a stiffener.

(6 marks)

(b) Outline a complete construction process of a reinforced concrete beams for a 13-storey building with the aids of sketches.

(18 marks)

Q3 A piling, also known as a pile, is a long, slender structural element driven into the ground to provide support for structures or to transfer loads to deeper, more stable soil or rock layers. Piling are commonly used in construction projects where shallow foundations would be inadequate due to poor soil conditions, high water tables, or the need to support heavy loads.

(a) Describe **TWO (2)** types of pilings that commonly used in the Malaysian construction industry with the aids of sketches.

(6 marks)

(b) Explain **THREE (3)** types of deep foundation.

(6 marks)

- (c) Illustrate a complete construction process of a 20m depth square pile for a 50-storey building.

(13 marks)

Q4 A wall is a vertical structure that divides or encloses space within a building or defines its perimeter. Walls serve several functions, including providing structural support, separating interior spaces, supporting roof loads, and providing protection from the elements. Walls come in various types, materials, and designs, each with its own characteristics and applications. In addition, doors and windows are typically integrated into the walls of a building to provide access and views.

- (a) Discuss **FIVE (5)** selection factors in choosing a door for a building.
(10 marks)
- (b) Compare between a load bearing wall and a non-load bearing wall in the Malaysian construction projects.
(6 marks)
- (c) Explain **FIVE (5)** factors that make windows crucial for building occupants.
(10 marks)

- END OF QUESTIONS -