



UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER I
SESSION 2013/2014**

COURSE NAME : CONSTRUCTION TECHNOLOGY II
COURSE CODE : BPD 22203
PROGRAMME : 2 BPC
EXAMINATION DATE : DECEMBER 2013/JANUARY 2014
DURATION : 3 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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

Q1 Road construction provides a traffic space to overcome any geographic restraints and the process involves a soil surface changes, bridges and tunnels construction, and also vegetation changes.

(a) State **FOUR (4)** types of road finishes. (4 marks)

(b) Sketch layers of concrete road. (6 marks)

(c) Explain with the aid of sketches, the complete construction process of tar macadam road. (10 marks)

Q2 Heavy construction mainly involves the preparation and excavation of commercial and institutional sites. It involves the clearing of land with heavy equipment to prepare the site for roads, industrial plants, gravel pits, etc. It also involves the construction of dams and bridges. The heavy construction requiring the use of large machinery and equipment.

(a) List **FOUR (4)** characteristics of heavy construction. (4 marks)

(b) Discuss **THREE (3)** factors to be considered when planning for heavy equipment usage in construction project. (6 marks)

(c) Describe with the aid of sketches, **FOUR (4)** types of heavy construction equipment that used in the construction of dams. (10 marks)

Q3 Industrialised Building System (IBS) is a construction process that utilises techniques, products, components, or building systems which involve prefabricated components and on-site installation. There are five types of IBS in Malaysia.

(a) Describe **ALL** types of IBS system in Malaysia. (10 marks)

(b) Discuss **FIVE (5)** reasons of using IBS as a preferred construction method in a heavy construction building. (10 marks)

- Q4** A twenty-storey hostel for UTHM students will be constructed in two months period. The hostel will be occupied by 500 students upon its completion. The hostel consists of student dorm, toilet and bath room, administration office, computer laboratory, cafeteria and student dining area, and washing and laundry area. The location and finished floor level of the building are 1km from main road and 2m higher than main road level, respectively. Additionally, there is an existing adjacent building with same finished floor level near the hostel construction site.
- (a) Select with giving justification, the most appropriate water plumbing system for the building. (4 mark)
- (b) Based on answer **Q4(a)**, illustrate a schematic drawing of water plumbing system for the building. (8 marks)
- (c) Analyse with the aid of sketches, the complete construction process of sewerage system for the hostel from the building to the main road. (8 marks)
- Q5** A bridge is a structure having a span, which permits passage over an obstacle such as waterways.
- (a) List **FOUR (4)** types of beam bridge. (4 marks)
- (b) Discuss **TWO (2)** types of bridge. (6 marks)
- (c) Explain with the aid of sketches, the complete construction process of a concrete beam bridge for 157m width of waterways. (10 marks)

-END OF QUESTION-