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Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2018/2019**

COURSE NAME : CONSTRUCTION TECHNOLOGY II  
COURSE CODE : BPD 22203 / BPD 15603  
PROGRAMME CODE : BPC  
EXAMINATION DATE : JUNE / JULY 2019  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

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

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**TERBUKA**

**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 and label layers of a typical rigid road. (6 marks)

(c) Outline with the aid of sketches, the complete construction process of a flexible road. (10 marks)

**Q2** (a) Differentiate direct and indirect water supply system for a building. (9 marks)

(b) Illustrate a schematic drawing of an indirect water system for a double storey bungalow house in Johor. (11 marks)

**Q3** (a) Discuss **THREE (3)** factors to consider when planning for heavy equipment usage in a construction project. (6 marks)

(b) An intelligent building involves the installation and use of advanced and integrated building technology systems. These systems include building automation, life safety, telecommunications, user systems, and facility management systems.

Describe **FOUR (4)** methods how the intelligent building can help people become more efficient. (8 marks)

(c) Buying versus renting of construction equipment has been a debate that most construction organisations have had for many years. In recent years though, the trend has leaned more towards renting. There are several reasons for this.

Outline **FOUR (4)** reasons why construction organisations choose to rent construction equipment. (12 marks)

**Q4** A new mixed development project, which consists of hotel and shopping complexes, will be constructed at the center of Kuala Lumpur city area. The project will adopt Industrialised Building System (IBS) technologies and the project details are illustrated in **Table Q4**.

**Table Q4: Hotel General Specification**

<b>Description</b>	<b>Details</b>	<b>Additional Information</b>
Storey	30	Level 1 to 5 – shopping complexes Level 6 to 30 – hotel room
Total floor area	50,000m <sup>2</sup>	Equal area size
Soil type	Sand	Soft and weak Hard stratum at 40m depth
Room type A	80 units	Level 6 to 20
Room type B	60 units	Level 21 to 28
Room type C	20 units	Level 29 & 30
Self-service laundry room	2 units	Level 10 & 15
Conference room	5 units	Level 6 & 7
Swimming pool	2 unit	Level 10
Fitness room	2 units	Level 15 & 28
Building Frame	Reinforced in-situ concrete	Grade 30
Floor	Hollow core	Grade 30
Roof (pitch)	Timber trusses	Concrete tile roof finishes
Total cost	RM 80 million	Design & Build
Building Characteristics	Tall building	Mixed-use

- (a) List **SEVEN (7)** main heavy equipment that suitable for the project. (7 marks)
- (b) Differentiate with the aids of sketches, tall, super tall and mega tall buildings. (6 marks)
- (c) Outline with the aids of sketches, **THREE (3)** height categories that are recognised to measure tall building height. (9 marks)
- (d) Justify **THREE (3)** suitable IBS technologies to be used for the construction project. (12 marks)

**-END OF QUESTIONS-**