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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : CONSTRUCTION ENGINEERING
COURSE CODE : BFC 21002
PROGRAMME : 1 BFF/2 BFF
EXAMINATION DATE : DECEMBER 2013/JANUARY 2014
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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

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- Q1**
- (a) Explain the meaning of substructure. (2 marks)
 - (b) Describe briefly the main function of foundation. (5 marks)
 - (c) Spun pile is a deep foundation which is commonly use in construction for building and bridges. Describe the advantages and disadvantages of spun pile. (8 marks)
 - (d) Provide a brief description of 10 steps the construction of ground beam. (10 marks)
- Q2** Superstructure is a part of a building or other structure above the foundation that transferred loads from their point of origin through it to the ground.
- (a) Give **three (3)** types of load that normally incurred by superstructure and provide one example of each load. (6 marks)
 - (b) By using a sketch, explain on the flow of load distribution of a double storey building from the roof structure to foundation. (11 marks)
 - (c) Explain in detail the construction process of reinforced concrete column. (8 marks)
- Q3** Formwork is a device usually made out of timber, steel, or many other kind of materials. The purpose is to contain the fresh concrete and to get the desirable shape, as set in project.
- (a) Discuss **four (4)** basic requirements of formwork principles (8 marks)
 - (b) Explain briefly **two (2)** type of formwork with suitable sketch. (6 marks)
 - (c) Your company won a tender for development of 18 storey apartment by using load bearing reinforce concrete wall. As an engineer, proposed the best formwork system for the construction of that apartment. (11 marks)

- Q4**
- (a) Explain **two (2)** kind of hazard and risk that may occur during concrete placement.
(8 marks)
 - (b) Discuss on **two (2)** most suitable methods for transporting concrete for a construction of multi-storey building.
(5 marks)
 - (c) Propose in detail the method Statement for concreting work of a double storey terrace house. The proposal shall include the objective, materials, plant, machinery and equipment, preparation works and the work methodology.
(12 marks)

- END OF QUESTION -