



**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER I  
SESSION 2019/2020**

COURSE NAME : TEMPORARY CONSTRUCTION WORKS  
COURSE CODE : BNC 31603  
PROGRAMME CODE : BNC  
EXAMINATION DATE : DECEMBER 2019/ JANUARY 2020  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER **FOUR (4)** QUESTIONS ONLY

**TERBUKA**

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

- Q1** Temporary structures will deal with the materials, methods and techniques in various construction operations.
- (a) State **FIVE (5)** major requirements of formwork. (5 marks)
  - (b) Cost of formwork plays significant role in cost of concrete. It varies from 30% to 40% of cost of concrete in ordinary structure. Discuss **FOUR (4)** Four major components contributing to cost of formwork. (4 marks)
  - (c) Construction of formwork involves considerable expenditure of time & material. Usual materials which are employed in preparation of formwork are timber and steel. Compare **FIVE (5)** advantages and disadvantages of timber formwork. (10 marks)
  - (d) As a technologies engineer, propose the best way to design formwork to produce a better concrete structure quality. (6 marks)
- Q2** In normal activities of building construction, it becomes necessary to have some type of temporary structure or support so as to proceed with work.
- (a) Explain the important of scaffolding in construction. (3 marks)
  - (b) Differentiate Single and Double Scaffolding in construction industries with aid of sketch and explanation. (12 marks)
  - (c) There is situation that parallel walls which have become unsafe due to removal or collapse of intermediate building need to be rebuild without demolished the existing wall. As technologies engineer, propose the suitable shoring to solve this situation. Give explanations and criteria to the chosen shoring. (10 marks)
- Q3**
- (a) Differentiate between a trench and a bulk excavation. (2 marks)
  - (b) Explain **SIX (6)** main cause of soil instability in excavation. (6 marks)
  - (c) List **FIVE (5)** reasons with explanations for problem related with excavation. (10 marks)
  - (d) Pre Excavation requirement must follow according to industrial health and safety regulation or registered professional engineer. Carry out **SEVEN (7)** of requirement that need to follow for the pre excavation work. (7 marks)

**Q4** Lifting gears play an important part in the lifting operation. If there is insufficient knowledge or a wrong choice is made, lifting may fail and accidents may result.

(a) State the definition of Ringging & Slings. (4 marks)

(b) Explain briefly about the wire ropes with aid of sketch. (6 marks)

(c) Differentiate **THREE (3)** advantages between Fibre Rope and Synthetic Fibre Rope. (6 marks)

(d) Propose safe working practice for inspection of Flat Webbing and Round Synthetic Sling. (9 marks)

**Q5** A cofferdam is a temporary structure designed to keep water and soil out of the excavation in which a bridge pier or other structure is built.

(a) Describe the meaning of word cofferdam (4 marks)

(b) State **FIVE (5)** type of cofferdam. (5 marks)

(c) You as a technologist engineer have been tasked by your company to produce a construction cofferdam to build a pier for a bridge project, propose and explain briefly a design consideration of cofferdam construction work. (8 marks)

(d) In cofferdam construction, safety is a paramount concern, since workers will be exposed to the hazard of flooding and collapse. As a technologist, prepare a safety requirement of cofferdam construction. (8 marks)

- END OF QUESTIONS -

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