

CONFIDENTIAL



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : CONSTRUCTION MATERIALS
COURSE CODE : BNP 10202
PROGRAMME : BNA/BNB
EXAMINATION DATE : DECEMBER 2019/ JANUARY 2020
DURATION : 2 HOURS 30 MINUTES
INSTRUCTION : ANSWER ALL QUESTIONS

TERBUKA

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

CONFIDENTIAL

Q1 (a) Explain types of concrete below:

- (i) Reinforce Concrete
- (ii) Prestressed Concrete
- (iii) Lightweight Concrete

(6 marks)

(b) Classify **TWO (2)** methods of concrete mixing.

(3 marks)

(c) Demonstrate using sketch and briefly describe in detail the procedure of slump test.

(10 marks)

(d) Sketch and compare **THREE (3)** types of slump test result.

(6 marks)

Q2 Steel is one of the element and material use in construction.

(a) Classify **FOUR (4)** classes of steel.

(8 marks)

(b) Lintz and Donawitz (L.D) process is one of the methods of steel manufacturing.

(i) Define **THREE (3)** others method of steel manufacturing.

(3 marks)

(ii) Discuss on hardness of steel as one of the properties for the material.

(6 marks)

(c) Sketch and explain the usage of steel structure below:

- (i) Frame Structure.
- (ii) Shell Type Structure.
- (iii) Suspension Type Structure.

TERBUKA (8 marks)

- Q3** (a) Briefly describe types of cement below:
- (i) Ordinary Portland Cement (OPC)
 - (ii) Rapid Hardening Portland Cement (RHPC)
 - (iii) White and Colored Portland Cement (WCPC)
- (6 marks)
- (b) List out **FOUR (4)** chemical composition of OPC.
- (4 marks)
- (c) State the importance of good cement storage.
- (3 marks)
- (d) With the aid of sketches, explain **SIX (6)** good practices and effective cement storage method for a simple construction project.
- (12 marks)

Q4 Aggregate is an element that gives strength for concrete.

- (a) Categorize **THREE (3)** physical properties for aggregate.
- (6 marks)
- (b) Define and state **THREE (3)** examples for types of aggregate below:
- (i) Fine Aggregate
 - (ii) Coarse Aggregate
- (6 marks)
- (c) Prepare in detail the experimental process to determine the grading of aggregate.
- (10 marks)
- (d) From **Q4 (c)**, critique by sketch **THREE (3)** shapes of aggregates which are unsuitable for concrete mixed.
- (3 marks)

TERBUKA

- END OF QUESTION -