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**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
SEMESTER II  
SESSION 2014/2015**

COURSE NAME : CONSTRUCTION MATERIALS  
COURSE CODE : BNP 10202  
PROGRAMME : 1 BNC  
EXAMINATION DATE : JUNE 2015 / JULY 2015  
DURATION : 2 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

THIS QUESTION PAPER CONSISTS OF **FOUR (4)** PAGES

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**Q1** Concrete work is the most important thing in construction :

- (a) Explain **THREE (3)** main purposes of concrete compaction. (6 marks)
- (b) State **TWO (2)** methods of concrete compaction. (3 marks)
- (c) Explain and sketch the procedure of slump test in detail. (10 marks)
- (d) Sketch and explain **THREE (3)** types of slump for fresh concrete. (6 marks)

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

- (a) Identify **FOUR (4)** processes involved in manufacturing of steel. (4 marks)
- (b) Lintz and Donawitz (L.D) process is one of the method of steel manufacturing.
  - i) Inteprate what is Lintz and Donawitz (L.D) process? (2 Marks)
  - ii) Explain in detail the L.D process (6 Marks)
- (c) Sketch and ilustrate the usage of steel in construction
  - i) Frame Structure.
  - ii) Shell Type Structure.
  - iii) Suspension Type Structure. (8 marks)
- (d) Differentiate the differences between ordinary bolt and friction bolt. (5 marks)

**Q3** Brick is used in wall and partition for the building

(a) Discuss in detail the process of brick manufacturing (8 marks)

(b) Explain and sketch :

- i) English Bond.
- ii) American Bond.
- iii) Flemish Bond.

(9 marks)

(c) In your opinion, give **TWO (2)** advantages of using masonry units for road and driveway?

(4 marks)

(d) Define Mortar in detail.

(4 marks)

**Q4** (a) Defect can affect the strength of a wood. Differentiates **THREE (3)** differences between heart, cup and star shake. (6 marks)

(b) There are several terms use in Wood Industries. Briefly explain the definition below:

- i) Timber.
- ii) Lumber.
- iii) Wood.

(6 marks)

(c) Fiber Reinforce Polymer (FRP) is an advanced material in construction material.

i) Determine the definition of FRP

( 3 Marks)

ii) Explain the properties of the FRP materials

( 4 Marks)

(d) Rubber is a very important material used in a wide range variety of product.  
Elasto Rubber is an innovation in rubber material. and

i) Explain What is Elasto Rubber

(2 Marks)

ii) List **FOUR (4)** advantage of Elasto Rubber.

(4 Marks)

**- END OF QUESTION -**