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Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESI 2021/2022**

- COURSE NAME : BUILDING CONSTRUCTION 1
(MATERIAL IN CONSTRUCTION)
- COURSE CODE : BFR 21203
- PROGRAMME CODE : BFR
- EXAMINATION DATE : JULY 2022
- DURATION : 3 HOURS
- INSTRUCTION
1. ANSWER ALL QUESTIONS.
 2. THIS FINAL EXAMINATION IS CONDUCTED VIA **CLOSED BOOK**.
 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

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

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- Q1** (a) Glass plays many roles and takes many forms in buildings design. Explain **FIVE (5)** advantages and **FIVE (5)** disadvantages of the glass in buildings design. (10 marks)
- (b) Based on your opinion, determine if the glass application is suitable for Malaysian buildings? Justify your answer from the climate and economics point of view. (5 marks)
- (c) With the aid of illustration, explain **FOUR (4)** types of Curtain Wall Glazing systems. (10 marks)
- Q2** (a) Compare the properties of Softwood and Hardwood. (10 marks)
- (b) Recommend suitable timber based on the following uses and applications. Justify your recommendation based on the property requirements for the uses and applications.
- (i) Door and window frames
 - (ii) Flooring
 - (iii) Timber piles and poles
 - (iv) Heavy construction
 - (v) Shingle and external cladding
- (10 marks)
- (c) Discuss the durability of the timber and the measures needed to maintain the timber's durability. (5 marks)
- Q3** (a) Outline **FIVE (5)** 'mortar' functions as a vital part of masonry construction. (5 marks)
- (b) Illustrate **FIVE (5)** joint tooling profiles for brickwork. (5 marks)
- (c) Classify brick based on the volume and thickness of the clay. Based on this classification, state its applications in the building components and constructions. (6 marks)

- (d) List **FOUR (4)** important criteria in choosing suitable brick for construction. (4 marks)
- (e) State **TWO (2)** precedent buildings worldwide that manipulate the brick masonry construction as a main facade design feature. With the aid of illustration, sketch those facade design features. (5 marks)
- Q4** You are assigned to design small private shelter by using the timber as main material. By applying basic timber construction:
- (a) Illustrate at least **TEN (10)** assembled basic timber construction components from the foundation to the roof in your small private shelter design. (10 marks)
- (b) Recommend **FIVE (5)** suitable *Tanggam* (Mortise) to connect the components in your 'small private shelter' design. By using exploded diagrammatic drawings, sketch your *Tanggam* (Mortise) recommendation to show the connection of the components. (15 marks)

– END OF QUESTIONS –

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