



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2017/2018**

COURSE NAME : BUILDING SCIENCE AND SUSTAINABILITY
COURSE CODE : BNB 31503
PROGRAMME CODE : BNB
EXAMINATION DATE : JUNE/ JULY 2018
DURATION : 3 HOURS
INSTRUCTION : ANSWER **FOUR (4)** QUESTIONS ONLY

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

- Q1** (a) Define terms below:
(i) Building envelope.
(ii) Building science. (4 marks)
- (b) Briefly describe and sketch **THREE (3)** modes of building heat transfer. (6 marks)
- (c) Based on **Q1 (b)**, predict what will happen if the building have no insulation. (4 marks)
- (d) Differentiate low and high technology in terms of building performance. (6 marks)
- (e) List out **FIVE (5)** important factors on why engineering technologist need to understand the building science. (5 marks)
- Q2** (a) Define Indoor Environmental Quality (IEQ). (3 marks)
- (b) Draw a mind map to simplify the IEQ main factors and parameters. (12 marks)
- (c) From answer **Q2 (b)**, choose **ONE (1)** most important factor and state your reason. (4 marks)
- (d) Compare Sick Building Syndrome (SBS) and Building Related Illness (BRI). (6 marks)
- Q3** (a) State **FOUR (4)** types of environmental noise. (2 marks)
- (b) Calculate Sound Pressure Level (SPL) below:
(i) 60 dB + 60 dB
(ii) 75 dB + 80 dB + 93 dB (6 marks)
- (c) There are five types of sound absorption materials. Describe and illustrate only **THREE (3)** of them. (9 marks)
- (d) Discuss **ONE (1)** effective sound chamber and its correlation with sound insulation. (8 marks)

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