



# UTHM

Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

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

COURSE NAME : BUILDING MAINTENANCE AND SERVICES  
COURSE CODE : BPE 44503  
PROGRAMME CODE : BPD  
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020  
DURATION : 3 HOURS  
INSTRUCTION : ANSWER ALL QUESTIONS

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

**TERBUKA** CONFIDENTIAL

- Q1** Maintenance is the process of ensuring that buildings and other assets retain a good appearance and operate at optimum efficiency.
- (a) Differentiate between strategic and tactical maintenance. (10 marks)
- (b) Discuss **THREE (3)** types of maintenance strategies. (15 marks)
- Q2** Failures and defects are common phenomena in construction industry. Building defects arise due to inappropriate or poor design, use of sub-standard materials and workmanship as well as insufficient attention given to building maintenance.
- (a) Discuss **THREE (3)** factors in building design which may contribute to defects in buildings. (15 marks)
- (b) Explain the following factors that contribute to building defects.
- (i) Sub-standard workmanship
- (ii) Adverse surrounding environment (10 marks)
- Q3** Natural ventilation is increasingly being used in modern public buildings to minimise the consumption of non-renewable energy. It is also an effective measures to improve indoor air quality.
- (a) Describe the principles of natural ventilation. (5 marks)
- (b) Discuss **FIVE (5)** factors to be considered when designing natural ventilation provision for buildings. (10 marks)
- (c) Explain the natural ventilation, which is formed by the combination of wind and stack effect with the aid of a sketch. (10 marks)

**Q4** Fire safety planning normally involves several important aspects for designer's consideration.

- (a) List **FIVE (5)** most important aspects of fire safety planning. (5 marks)
- (b) Differentiate between active and passive fire protection system from the perspective of maintenance. (10 marks)
- (c) Discuss **TWO (2)** aspects of site planning of buildings, which are considered in passive firefighting. (10 marks)

- END OF QUESTIONS -

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