



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

COURSE NAME : BUILDING SERVICES
COURSE CODE : BPD 32902
PROGRAMME : BPC
EXAMINATION DATE : DECEMBER 2019 / JANUARY 2020
DURATION : 2 HOURS
INSTRUCTION : ANSWER ALL QUESTIONS

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

Q1 Control of ventilation rates is influenced by various authorities and codes of practice, some statutory and others recommendations. The latter in the form of British Standard (BS) design guidelines are often used as the criteria for establishing mandatory applications. Therefore, to control ventilation rates, it is crucial to understand the meaning of ventilation system first.

- (a) Define building ventilation system. (4 marks)
- (b) Explain **THREE (3)** factors to be considered in providing a good ventilation system of the buildings. (6 marks)
- (c) Discuss with the aid of sketches, the possibilities combination of natural and mechanical ventilation system. (10 marks)

Q2 A building should have special protections, active and passive protections to prevent fires from occurring and to facilitate the fire rescue session.

- (a) Describe the active and passive protection covers to prevent fires in buildings. (4 marks)
- (b) Discuss the specifications of each type of active protections in details.
 - (i) The heat detectors (3 marks)
 - (ii) The smoke detectors (3 marks)
- (c) Differentiate **FOUR (4)** types of sprinkler that normally used in the building. (20 marks)

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Q3 There are various types of service in building services systems that are intended to provide a comfortable and safety for the occupants of the buildings and houses. To provide comfort conditions to occupants, there are two water supply systems (direct and indirect system) are often used in Malaysia. Each water supply systems used has distinct advantages.

(a) Demonstrate with the aid of sketches, the direct and indirect water supply systems in two-storey houses.

(10 marks)

(b) Binae Maju Enterprise is keen on developing a ten-storey block of departments. However, it is found that the water pressure in the vicinity is very low.

Propose with illustration, the best solution to be adopted in order to supply water to the block.

(20 marks)

Q4 The wastewater treatment process may vary slightly at different locations, depending on the technology of the plant and the wastewater it needs to process. However, the basic principles are largely the same.

(a) Discuss of wastewater treatment process.

(10 marks)

(b) Singapore has introduced the new water system which recycles wastewater for domestic usage. This action was taken due to the scarcity of quality raw water sources.

Discuss **TWO (2)** advantages and disadvantages of this system.

(10 marks)

~~-END OF QUESTIONS-~~

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