



**UNIVERSITI KUALA LUMPUR
Malaysia France Institute**

**FINAL EXAMINATION
JULY 2010 SESSION**

SUBJECT CODE : FGD 20602
SUBJECT TITLE : THERMAL STORAGE
LEVEL : DIPLOMA
TIME / DURATION : 12.30pm – 2.30pm
(2 HOURS)
DATE : 15 NOVEMBER 2010

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
 2. This question paper is printed on both sides of the paper.
 3. Please write your answers on the answer booklet provided.
 4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
 5. This question paper consists of TWO (2) sections. Section A and B. Answer all questions in Section A. For Section B, answer two (2) question only.
 6. Answer all questions in English.
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THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 60 marks)**INSTRUCTION: Answer ALL questions.****Please use the answer booklet provided.****Question 1**

- a) What is the TES?
(2 marks)
- b) Where the application of Thermal storage system for Heating Ventilation Air-Conditioning System?
(4 marks)
- c) State seven (7) items for terminology of Thermal Storage System
(14marks)

Question 2

- a) Sketch graph about the Thermal storage system
 - i) Full storage
(5 marks)
 - ii) Partial storage
(5 marks)
- b) Explain about the Thermal storage system
 - i) Full storage
(5 marks)
 - ii) Partial storage
(5 marks)

Question 3

- a) List five (5) advantage of ice encapsulated in Thermal storage system.
(10 marks)

- b) List five (5) disadvantage of ice encapsulated in Thermal storage system.
(10 marks)

SECTION B (Total: 40 marks)**INSTRUCTION: Answer only TWO questions.****Please use the answer booklet provided.****Question 4**

- a) List two (2) function of ice storage tank?

(8 marks)

- b) One of the type for Thermal storage system is
Ice-on-coil in internal-melt:

- i) Sketch and state the component in detail schematic.

(6 marks)

- ii) Explain in detail about operation of ice-on-coil in internal-melt

(6 marks)

Question 5

- a) Charging process is one of the operation in Thermal storage system.
- i) Sketch the drawing about charging process for Ice-on-coil in external-melt type.
(5 marks)
 - ii) Explain the charging process operation
(5 marks)
- b) Discharging process is one of the operation in Thermal storage system.
- i) Sketch the drawing about discharging process for Ice-on-coil in external-melt type.
(5 marks)
 - ii) Explain the discharging process operation
(5 marks)

Question 6

- a) From the list of equipment below sketch and state in detail the schematic diagram of Thermal Storage system by using ice cell.
- i) Cooling tower
 - ii) Heat exchanger
 - iii) Chillers
 - iv) Condenser water pump
 - v) PEGP pump
 - vi) Ice cell
 - vii) Fan coil unit
- (20 marks)

END OF QUESTION