



Note: Assume any data required, state your assumption clearly. Answer all the following Questions

**Question (1)**

(50 Marks)

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- (A) Define the followings: Humidity Ratio, Relative Humidity, Degree of Saturation, Dew-Point Temperature, and Metabolic Rate.
- (B) Discuss briefly the classification of air conditioning systems according to construction and operating characteristics.
- (C) Explain the Two-Node Model of Thermal Interaction.
- (D) Discuss in details the factors affecting thermal comfort.

**Question (2)**

(50 Marks)

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- (A) What is the evaporative heat losses? State these losses briefly?
- (B) What are the main functions of sensors and transducers in air conditioning and ventilation systems and how are these used?
- (C) What are differences between cooling load and coil load calculations? Also, state the components of each.

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Good Luck, Dr. Khaled Yousef