



*the*  
**UNIVERSITY**  
*of*  
**GREENWICH**

**EXAMINATION PAPER:**           **ACADEMIC SESSION 2005 / 2006**

**Campus:**                       **Avery Hill**

**School:**                         **Architecture and Construction**

**Department:**               **Building Economics & Management**  
  **Urbanism**

**Course Code:**               **BUIL 1029**

**Course Title:**               **TECHNOLOGY 3 : THE BUILT ENVIRONMENT**

**Level:**                         **2**

**Duration**                      **2 hours**

**Date:**                         **3<sup>rd</sup> May 2006, start 9.30 am**

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### **INSTRUCTIONS TO CANDIDATES & FOR INVIGILATORS**

**Answer any THREE questions.**

**All questions carry equal marks.**

**Candidates must comply with the “Instructions to Candidates” printed on the examination answer book.**

1. a) Measurement of noise generally uses the dBA scale. Explain, with the aid of diagrams, what this is and why it is important to use dBA when measuring noise on construction sites. (13 marks)
- b) The following SPL's were measured in a survey:
- i) Mortar Mixer 65dB
  - ii) Pneumatic Drill 70dB
  - iii) Vibrating Poker 63dB
- Calculate the total sound pressure level if all of this equipment is to be used simultaneously. (15 marks)
- c) Discuss reasons for using the dB scale for sound measurement. (5 marks)
2. a) Discuss the reasons for using closed loop control in a system rather than open loop. Illustrate your answer with suitable flow diagrams. (16 marks)
- b) Define the terms positive feedback and negative feedback. Give an example of a control system using negative feedback and explain the advantages of using such a system. (17 marks)
3. a) Using diagrams to aid your explanation detail how electricity is distributed from the generating station to the domestic consumer in the U.K. You should clearly explain why alternating current is used and why voltages through the grid are much higher than normal domestic supply voltage. (25 marks)
- b) Discuss the problems caused by using electrical equipment with a power factor of less than unity and give examples of the types of equipment that may cause these problems. (8 marks)

4. Discuss, using suitable diagrams, the advantages and disadvantages of the two main methods of domestic cold water supply in the U.K. Explain how local regulations have had an influence on choice of system. (33 marks)
5. a) Briefly explain the functions of a domestic heating system. (8 marks)
- b) Describe how a typical indirect central heating system operates using sketches to illustrate your answer. (13 marks)
- c) Explain how the controls in a modern central heating system operate highlighting their role in safety and energy conservation. (12 marks)