

THE OPEN UNIVERSITY OF SRI LANKA
Department of Civil Engineering
Diploma In Technology (Civil) - Level 4



CEX4235 - Building Engineering

FINAL EXAMINATION - 2009

Time Allowed: Three (03) Hours

Date: 25-03-2010 (Thursday)

Time: 1400 - 1700 hrs.

Answer Five (05) out of Seven (07) questions.

Q1.

- List down and describe the objectives of a successful project. (5 marks)
- Describe the first two stages of implementation of building projects. (5 marks)
- Write down the objectives of the final sketch design stage. (5 marks)
- Describe the external factors affecting the outcome of a project, giving examples, which are beyond the control of the project manager. (5 marks)

Q2.

- Explain using examples with sketches what is meant by Primary Circulation, Secondary Circulation and Domain. (5 marks)
- Explain why a good orientation is important for a building. (5 marks)
- What do you understand by 'differential settlement' of foundations? (5 marks)
- Explain the importance of using the 'Standard Method of Measurement' in preparing the Bill of Quantities for construction work. (5 marks)

Q3.

- Describe five methods adopted in water treatment. (5 marks)
- List four important characteristics a good chemical disinfectant should possess. (5 marks)
- Compare and contrast Branched and Grid systems of water distribution. (5 marks)
- State two advantages and disadvantages each of gravity system used for water distribution. (5 marks)

Q4.

- Explain why traps are used in sanitary disposal systems giving two examples. (5 marks)
- What are the considerations taken into account in designing septic tanks? (5 marks)
- Discuss the principal methods of solid waste disposal. (5 marks)
- Describe three common methods of handling solid waste in hi-rise apartments. (5 marks)



Q5.

- (a). Sketch clearly two successive courses of the following, (3 marks)
- (i). Tee (T) junction between 'half brick' wall and 'one brick' wall. (3 marks)
 - (ii) Right Angle (L) Quoin of a 'one brick' wall in English bond. (4 marks)
- (b). Strength of masonry walls depends on several factors. Describe two factors. (5 marks)
- (c). Describe, using sketches of supporting system used, how progress in excavation is achieved in excavation of loose soils. (5 marks)
- (d). Describe four different types of finishes to floors. (5 marks)

Q6.

- (a). Give two advantages of using alternating current over direct current electrical power supply for industrial and domestic purposes. (5 marks)
- (b). Explain clearly what is meant by "Power Factor" of alternating current electrical installations, using diagrams where necessary. (5 marks)
- (c). Part 4 of the IEE Wiring Regulations (16th Edition) covers "Protection for Safety". Enumerate the items covered under this section. (5 marks)
- (d). Discuss the difference between an "overload" and "short circuit" current. (5 marks)

Q7.

- (a). What is Ventricular Fibrillation and how does it happen when a person receives an electric shock? (5 marks)
- (b). Indicating main components, sketch the circuit diagram of a typical household electrical installation with two sub circuits. (5 marks)
- (c). Write a descriptive note on Compact Fluorescent Lights (CFL) that is currently popular in Sri Lanka as an energy saving luminary. (5 marks)
- (d). Draw a psychrometric chart for the following situation - Air enters the air handling unit at 35 deg. C db with an RH of 90%. Conditioned air is required at 25 degrees C db with an RH of 50%. (5 marks)

