



Date: 10<sup>th</sup> of April 2006

Time – 9.30 – 12.30 hrs

**Answer Section A and, any four (4) questions from Section B**

Section A carries 24% and Section B carry 38% each.

**Attach Section A to answer script for Sections B&C after writing answers in the spaces provided.**

**SECTION B**

**Answer four questions only from section B**

- Q1. (a). The Client is the important person or organization of the any project and the client initiates the idea of any project.
- (i). Give an example of each, a 'user client' and a 'non-user' client and discuss the main differences between the two types. (4 Marks)
  - (ii). Explain functional feasibility of a project with an example (5 Marks)
- (b). Describe with sketches how the "orientation of a building" is vital for any kind of building. (5 Marks)
- (c). Give two reasons why a "site survey" should be carried out before any work starts on a project. (5 Marks)
- Q2. (a). Sketch the water demand pattern of urban areas for one working day and use it to describe hourly peak factor and daily peak factor. (6 Marks)
- (b). State four basic Quality requirements of water. (4 Marks)
  - (c). Describe using a sketch the requirement of a Sedimentation tank in water treatment plant (5 Marks)
  - (d). List the types of pumps used in water supply and describe the reason for cavitation in pipes. (4 Marks)
- Q3. (a). Discuss three performance requirements of sanitary fixtures in modern toilets (5 Marks)
- (b). What is the "self cleansing velocity" used in Sewer lines and why is this velocity so vital. (4 Marks)
  - (c). Describe three main factors that should be considered in designing a Septic tank for a residential building. (5 marks)
  - (d). "Composting" is one of the systems used for disposal of waste. Describe the method and state advantages and disadvantages of composting over two other frequently used methods. (5 Marks)

- Q4. (a). Mention five main services functioning in high-rise buildings and describe the duties of a service engineer in a multistorey building project. (5 Marks)
- (b). Discuss the requirement of manholes in sewer lines and state the places where manholes should be included. (5 Marks)
- (c). Describe requirements and method of surface preparation before plastering a new brick wall. (4 Marks)
- (d). Sketch a suitable foundation for a two storey house which is situated in an area of normal soil and water table 10 m deep from ground level. (5 Marks)
- Q5. (a). State the difference between Alternative Current supply and Direct current supply (5 Marks)
- (b). Describe how the 'Visual Inspection' can be made prior to installing electrical equipment. (4 Marks)
- (c). What are the main effects due to earth leakage in buildings and what measures can be taken for prevention of earth leakage. (5 Marks)
- (d). Describe main functions of an MCB. (5 Marks)



7. State four basic steps in the preparation of "Bill of Quantities" of a project.
  
  
  
  
  
  
  
  
  
  
8. What are the precautions that can be taken to avoid "moisture rising up" in the external walls of buildings.
  
  
  
  
  
  
  
  
  
  
9. Draw an elevation and plan view of a 9" thickness brick wall built using the "English bond"
  
  
  
  
  
  
  
  
  
  
10. State the three pressure heads used in water supply and state the relationship among them.
  
  
  
  
  
  
  
  
  
  
11. Explain why traps are used in sanitary disposal system.
  
  
  
  
  
  
  
  
  
  
12. List two main types of valves used in water supply system and an example of location for each.