The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Civil Engineering

Study Programme	: Bachelor of Science Honours in Engineering
Name of the Examination	: Final Examination
Course Code and Title	**: CVX4349 Building Engineering**
Academic Year	: 2024/2025
Date	: Saturday, 7th March 2026
Time	: 1330-1630hrs
Duration	: **3 hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of **Seven (7)** questions in **Four (4)** pages.
3. Answer any **Five (5)** questions only. All questions carry equal marks.
4. Answer for each question should commence from a new page.
5. This is a Closed Book Test (CBT).
6. Answers should be in clear hand writing.
7. Do not use Red colour pen.

Q1.

(a) Briefly explain the importance of managing time, cost and quality of a project. (5 marks)

(b) Briefly explain three objectives of a successful project? (5 marks)

(c) If you are assigned as a project manager of a mega construction project like Cinnamon Life, what would be your main role? (5 marks)

(d) Total cost of a project consists of both initial costs and recurrent costs. Briefly explain these costs using 'Life Cycle Cost'approach. (5 marks)

Q2.

(a) What are main functions and requirements of a foundation? What are the main types of foundations? (5 marks)

(b) Draw a sketch of a Double Pitch Roof (or Gable Roof) naming important components. (5 marks)

(c) What is the main function of a load bearing wall? List an advantage and a disadvantage of load bearing walls. (5 marks)

(d) Briefly explain three types of floor finishes used in Sri Lanka, giving advantage and disadvantage of each. (5 marks)

Q3.

(a) Explain treatment methods applied during water purification process, giving purpose of each method. (5 marks)

(b) Compare and contrast between "slow sand filters" with "rapid sand filters". (5 marks)

(c) State two advantages and two disadvantages of "branched" and "grid" systems of water distribution. (5 marks)

(d) Briefly explain importance of continuous water supply and challenges face by relevant authorities during a disaster like aftermath of the cyclone Ditwah. (5 marks)

Q4.

(a) Briefly describe **English bond, Flemish bond and Stretcher bond** in masonry works with illustrations. (5 marks)

(b) Draw a clear sketch of a septic tank (cross section) giving rough length proportions and naming important elements. (5 marks)

(c) Solid waste, especially Municipal Solid Waste (MSW), is a growing problem in urban areas of Sri Lanka. Describe two methods of disposal of solid waste giving advantages and disadvantages, and their applicability to Sri Lanka. (5 marks)

(d) What are the four main implementation stages of building projects? Briefly explain Construction Stage explaining its sub stages. (5 marks)

Q5.

(a) Describe the difference between Alternating Current (AC) and Direct Current (DC) giving two advantages of each. (5 marks)

(b) Draw a simple circuit diagram showing main switch, trip switch (RCCB), Breakers (MCB), 2 bulbs with switches and 2 plugs, showing clearly how live, neutral and earth wires are connected to each element. (5 marks)

(c) Motors and generators are electromagnetic devices. They have current-carrying loops that rotate in magnetic fields. Describe the differences between mortar and generator considering main principle of working and function (5 marks)

(d) Briefly explain voltage variation in three phase supply with a neat diagram. (5 marks)

Q6.

(a) Describe the difference between Overload Current and Short Circuit Current. Which one is more dangerous? (5 marks)

(b) The general practice of configurations of Three-Phase Supply Systems is to connect output wires in either of two configurations termed 'star' or 'delta'. Draw diagrams of these two systems naming important elements. (5 marks)

(c) Briefly explain the difference between Miniature Circuit Breaker (MCB) and Residual Current Circuit Breaker (RCCB) used in electrical protection system. (5 marks)

(d) Define the term 'Daylight Factor' used in building illumination and explain how this can be increased. (5 marks)

Q7.

(a) Contrast and compare advantage(s) and disadvantage(s) of Incandescent light bulb, CFL bulbs and LED bulbs. (5 marks)

(b) What is the transformer? Explain the function of it with a neat diagram showing relationship among input voltage (V1), output voltages (V2), primary winding (N1) and secondary winding (N2). (5 marks)

(c) Briefly explain the air-conditioning (often refers to as AC) process. (5 marks)

(d) How Dry Bulb Temperature (DBT) and Wet Bulb Temperature (WBT) are measured ? Why are they important in Air-condition (AC)? (5 marks)