



UNIVERSITY OF RUHUNA

Faculty of Engineering

End-Semester 3 Examination in Engineering: March 2026

Module Number: CE3202

Module Name: Construction Processes and Technology

[Three Hours]

[Answer all questions, each question carries twelve marks.]

Q1.

- a) What is meant by preliminary project works in construction? List four key aspects to be considered under preliminary project works. [3.0 Marks]
- b) Briefly discuss the reasons for carrying out an initial site investigation before tender. [2.0 Marks]
- c) Specify four factors that should be considered when planning the site layout for a multistory construction project. [2.0 Marks]
- d) Briefly discuss the following documents handled by the site office
 - i. Construction specifications
 - ii. Variation orders[3.0 Marks]
- e) Briefly discuss the three main goals a construction manager aims to achieve in a project. [2.0 Marks]

Q2.

- a) List four types of earthmoving machinery and equipment used in construction and briefly discuss their functions. [2.0 Marks]
- b) Briefly discuss the various types of forces applied for soil compaction by different compacting machinery and equipment. [3.0 Marks]
- c) Sketch and name the various types of shallow foundations that can be used for building construction works. [2.0 Marks]
- d) List four reasons for the failure of shallow foundations. [2.0 Marks]
- e) Briefly discuss, with sketches, the various types of piles used in deep foundations of building constructions. [3.0 Marks]

Q3.

- a) How can thermal expansion movements and shrinkage movements be controlled in a brick wall? [2.0 Marks]
- b) Briefly discuss the features of a good mortar mix. [2.0 Marks]
- c) List four ways in which water damage in brick walls can be prevented. [2.0 Marks]
- d) Sketch and name the components of a door and door frame. [2.0 Marks]
- e) Briefly discuss the construction process of the following.
 - i. Ceramic tiled floor
 - ii. Wall plastering and finishing work [4.0 Marks]

Q4.

- a) What is meant by a pitched roof? [2.0 Marks]
- b) Name the parts of the roof from i to ix shown in Figure Q4. Use the correct roof terminology.

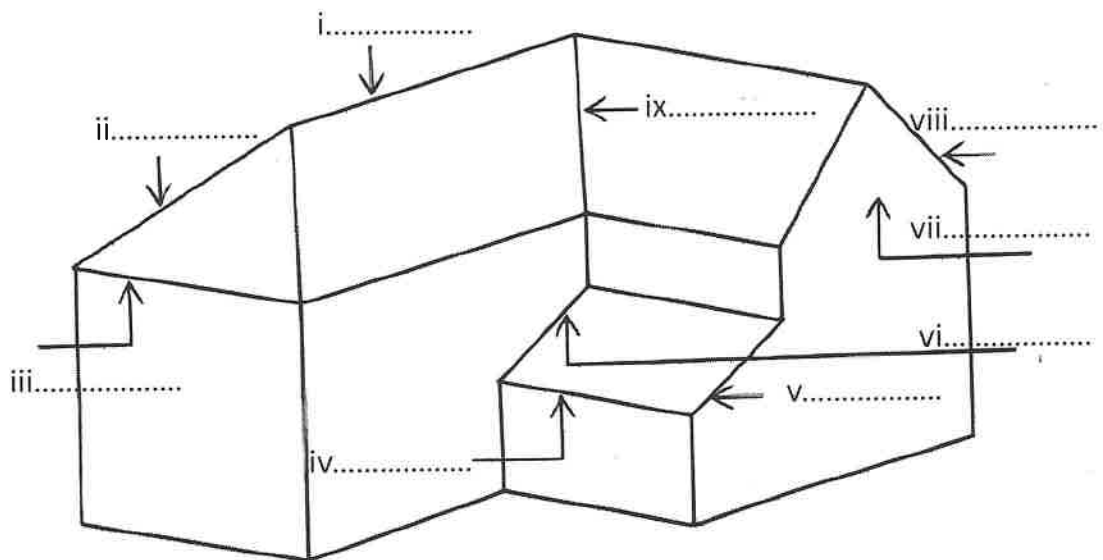


Figure Q4: Parts of a Roof

- c) Compare and contrast truss-designed roofs with stick-frame roofs. [3.0 Marks]
- d) Briefly discuss the modes of structural failure of a timber-raftered roof. [2.0 Marks]
- e) Explain the advantages of having a green roof in modern buildings. [2.0 Marks]

Q5.

- a) List four advantages of balancing cuts and fills in earthwork planning.
[2.0 Marks]
- b) Briefly discuss what is meant by fill control in earthwork construction.
[2.0 Marks]
- c)
 - i. Describe the purpose of soil stabilization in construction.
 - ii. Briefly discuss the various soil stabilization types applied in the construction industry.
[4.0 Marks]
- d)
 - i. Briefly discuss the foundation work related to embankment construction.
 - ii. Elaborate on the statement: "The thoroughness with which the foundation is constructed is reflected in the operational performance of the embankment structure."
[4.0 Marks]