

CONSTRUCTION TECHNIQUES

BRANCH:- CIVIL

SEMESTER – THIRD

These important questions have been prepared using your previous exam papers (PYQs), verified concepts, and additional reference from trusted online academic sources. For deeper understanding, please refer to your class notes as well.

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1 HIGH & LONG IMPORTANT QUESTIONS

Unit 1 & 2: Foundations

- Define **Pile Foundation**. Classify piles based on *function* (Bearing, Friction, Compaction) and *material*. Explain **Under-reamed Piles** with a sketch (Why are they used in Black Cotton Soil?).
- Explain **Site Exploration**. Describe the methods of site exploration. Explain the **Plate Load Test** or **Standard Penetration Test (SPT)** to determine bearing capacity.
- Define **Shallow Foundation**. Explain the construction of **Spread Footing** and **Raft Foundation** with neat sketches.

Unit 3 & 4: Masonry (Evergreen)

- Define **Bond** in brick masonry. Differentiate between **English Bond** and **Flemish Bond**. Draw the Plan and Elevation of a **1 1/2 Brick Wall in English Bond**.
- Explain the different types of **Stone Masonry** (Rubble vs. Ashlar). Draw a neat sketch of **Random Rubble Masonry**.
- What is a **Partition Wall**? Explain the construction details of a **Brick Partition Wall** and a **Glass/Plywood Partition Wall**.

Unit 6: Stairs

- Define **Staircase**. Draw a neat, labelled plan and sectional elevation of a **Dog-legged Staircase**.
- What are the requirements of a **Good Staircase**? Classify different types of stairs (Quarter turn, Bifurcated, Spiral) based on shape.

Unit 7 & 8: Scaffolding & Formwork

- Define **Scaffolding**. Distinguish between **Single (Bricklayer's)** and **Double (Mason's)** Scaffolding with neat sketches.
- What is **Formwork**? State the requirements of good formwork. Discuss the **Stripping Time** (removal period) for formwork of beams, columns, and slabs.

Unit 11 & 13: Protection & Repair

- Define **Dampness**. What are the causes and effects of dampness? Explain the methods of **Damp Proofing (DPC)** in basements and plinths.
 - Explain the causes of **deterioration** in concrete. Describe the repair techniques: **Grouting** and **Guniting (Shotcrete)**.
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2 IMPORTANT & SHORT QUESTIONS (50–70% Probability)

Differences (Concept Check):

- **Load Bearing Structure** vs. **Framed Structure**.
- **Shoring** vs. **Underpinning**.
- **Plastering** vs. **Pointing**.
- **Pre-cast Concrete** vs. **Cast-in-situ Concrete**.
- **Flat Roof** vs. **Pitched (Sloped) Roof**.

Short Notes (Technical Terms):

- **Black Cotton Soil**: Why is it dangerous for foundations?
 - **Lintels & Arches**: Definition and function of a lintel.
 - **Flooring**: Short note on **Terrazzo** or **Timber Flooring**.
 - **Defects in Plastering**: Explain Blistering, Cracks, and Efflorescence.
 - **Job Layout**: Purpose of setting out a building plan.
 - **Doors**: Panel Door vs. Flush Door (Basic features).
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3 “AA BHI SAKTA HAI” QUESTIONS (Low probability but Smart Picks)

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- **Anti-Termite Treatment:** Explain the pre-construction method of soil treatment against termites.
 - **Wall Finishes:** Differentiate between **White Washing**, **Colour Washing**, and **Distempering**.
 - **Vacuum Dewatered Flooring (VDF):** Brief note on Tremix flooring (Modern technique).
 - **Explosives:** Precautions to be taken during storage and handling of explosives (Unit 1).
 - **False Ceiling:** Necessity and materials used for false ceilings.
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📌 ANALYST NOTE FOR STUDENT

1. **The "Diagram Rule":** In 2025, if you answer the "English Bond" or "Staircase" question *without* a diagram, you will lose 50% marks.
2. **The "Foundation Shift":** Last year (2024) had "Raft Foundation". This year (2025), **Pile Foundation** is the #1 predicted long question. Prepare it well.

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