Unit II & III

2 Marks

How do special forms for shells contribute to the strength of modern architectural structures?
How does pointing enhance the durability of masonry walls?
What is the primary purpose of shoring in excavation projects?
Explain the role of diaphragm walls in deep excavation projects
Describe a situation where underpinning is necessary for a construction project.
Explain the primary purpose of plastering in building construction.
What are the advantages of using flat slabs in multi-story buildings?
What is the primary purpose of shoring in excavation projects?
How does dewatering enhance the stability of construction sites in waterlogged areas?
What are the advantages of using pipe jacking in trenchless pipeline installation?

13 Marks

Discuss the design and structural benefits of using flat slabs in construction, comparing them with traditional beam-slab systems. Include applications and limitations.

Describe the construction and structural challenges of offshore platforms. How are they designed to withstand environmental conditions like waves, wind, and corrosion?

Explain the piling techniques used in foundation engineering. Discuss the different types of piles, their applications, and the factors affecting the choice of piling techniques for various soil conditions and structures.

Explain the diaphragm wall construction technique, its applications in deep foundation projects, and its advantages over traditional retaining wall systems

A major metro rail construction project involves tunneling through a densely populated urban area with existing structures, including high-rise buildings and subways. Discuss the challenges related to shoring, dewatering, and underpinning required to protect existing structures during the tunneling process. Propose solutions for ensuring safety, stability, and minimizing disruption to the surrounding area.

A construction company is designing a modern residential building using a flat slab system. However, the project is located in a coastal area, which exposes it to high humidity and salt content. Discuss the challenges the project might face in terms of plastering and pointing,

particularly for the external surfaces. Propose solutions for enhancing the durability and aesthetics of the building, considering environmental factors.