

SHANTILAL SHAH ENGINEERING COLLEGE, BHAVNAGAR

CIVIL ENGINEERING DEPARTMENT

Building Construction Technology – (3130607)

Question Bank (ONLY FOR MODULE-1)

Subsurface Investigation

1	What is foundation? Discuss the various functions of foundation.
2	What is subsurface investigation? What are the purposes of site exploration? How do you decide the depth of exploration?
3	What are the various methods of sub-soil exploration? What are the factors affecting the choices of particular method of site exploration?
4	What do you understand by earthy trial pit? When do you adopt it?
5	Describe in brief various methods of boring for sub-soil exploration. Explain wash boring with sketch.
6	What do you understand by geophysical methods? What are the various methods used? Describe A) Seismic method and B) Electrical resistivity method with neat sketch.
7	Describe the plate load test for determining safe bearing capacity of soil, giving sketches. What are its limitations?
8	Explain the methods of improving safe bearing capacity of soil?
9	A) State the purpose of soil exploration. B) Enlist the methods of site exploration. Explain anyone in the detail.

Shallow Foundation

1	What is meant by 'shallow foundation'? What are the various types of shallow foundations? Draw the sketches of it.
2	What is meant by a 'combined footing'? What are the circumstances in which a combined footing is provided? Describe with sketch.
3	What do you understand by a 'strap footing'? When do you provide it? Describe in brief with sketch.
4	What do you understand by 'raft foundation'? When do you prefer it? Describe its construction, giving details sketch.
5	What are the problems of foundation in black cotton soils? What pre-cautions are taken during foundation construction in black cotton soils? Explain with sketch undelivered pile foundation?
6	What are the characteristics of black cotton soil? Describe various types of foundation in black cotton soil giving sketch.
7	What are the causes of failure of foundation? What remedial measures would you adopt?
8	What are the causes of failure of foundation? When do you suggest (i) combined footing (ii) strap footing (iii) raft Foundation. Also state that which type of foundation is situated for black cotton soil?
9	Write causes of failure of foundation and remedial measures.
10	Explain steel grillage foundation with all details.

Deep Foundation

1	Explain the situations (or condition) in which pile foundation are used?
2	Discuss the main factors (points) affecting selection of types of piles.
3	Classify various types of Piles based on (i) Function and (ii) Materials and composition.
4	Describe in brief, the load-bearing piles.
5	Explain the method of formation Raymond piles, giving neat sketch.
6	Describe in brief, the common types of uncased cast-in-site concrete piles, giving sketches of each.
7	Describe which sketch any two cast-in-situ concrete piles.
8	Explain with sketches the methods of forming button bottom pile and simplex pile.
9	Describe giving sketch, precast concrete pile including process of casting, with their advantages and disadvantages.
10	Explain the important and necessity of pile cap and pile shoes giving sketch.
11	What are the most common causes of failure of piles?
12	Compare: (A) Cast-in-situ piles and pre-cast pile, (B) End-bearing pile and friction pile.
13	Explain which sketches, construction procedure of (i) Button-bottom pile simplex pile (ii) Simplex pile.
14	Write short note on sand piles with its advantages and disadvantages.
15	Differentiate between end bearing pile and friction pile.
16	Under which situation and Under Reamed piles required?
17	List different types of hammers used for pile driving. Give advantages and disadvantages of each.

Caissons

1	Define caissons. What are the functions or uses of caissons?
2	What are the factors to be considered, while making choice between cofferdam and caisson?
3	Describe the various construction materials used for caissons.
4	Describe box caissons giving neat sketch. In which situations box caissons are adopted?
5	Describe the construction procedure of open caissons (well foundation), giving neat sketch. In which situations they are used?
6	What is pneumatic caisson? Where is it adopted? Describe the procedure for sinking, giving advantages and disadvantages.
7	What types of loads are coming on the caissons?
8	What is the purpose of cutting edge? What are its properties? Describe various types of cutting edge, giving sketches of each, with advantages and disadvantages. What are the factors affecting the selection of cutting edge?
9	Describe the methods adopting to facilitate the sinking of caissons with its advantages and disadvantages.
10	What is meant by tilting of caissons? What are its reasons? How the tilting caissons can be brought in correct position?
11	What is caissons sickness or disease? What are its causes? What are its precautions to be taken to avoid caisson diseases?
12	Explain with sketch, different parts of well foundation along with bridge pier in the river.
13	Discuss the well sinking operation with sketches.