

Civil Engineer Interview Questions

Question No. 01

Explain what do you mean by flashing?

⇒ Flashing is an extended construction that is performed to hide and covers joints in a building from water penetration. Flashing is established at the intersecting roofs, walls, and parapets.

Question No. 02

What is Bursting Reinforcement?

⇒ Tensile stresses are caused at the time of the prestressing process and the maximum bursting stress arises where the stress trajectories are concave towards the line of action of the load. Reinforcement is required to withstand these lateral tensile forces.

Question No. 03

What are the major problems in using pumping for concreting works?

⇒ In pumping operation, the force exerted by pumps must decrease the friction between concrete and the pumping pipes, the weight of concrete, and the pressure head when keeping concrete above the pumps.

In fact, as only water is pumpable, it is the water in the concrete that moves the pressure.

The major issues associated with pumping are the effect of segregation and bleeding.

To fix these damaging effects, the proportion of cement is raised to improve cohesion in order to decrease segregation and bleeding.

On the other hand, a proper selection of aggregate grading helps to improve the permeability of concrete.

Question No. 04

What are the responsibilities of a construction manager?

⇒ The duties of a construction manager are Cost Estimates, Pre-purchase of selected materials Selection of bidders for the bidding phase Analysis of proposals Construction contract negotiations Construction Scheduling and Monitoring Cost control of construction Construction supervision.

Question No. 05

What is a Shear Slump?

⇒ Shear slump means that the concrete mix is lacking in cohesion. Consequently, it may experience segregation and bleeding and thus is avoided for the durability of concrete.

Question No. 06

Why is concrete weak in tension?

⇒ Concrete is produced up of a collection of materials (many aggregate types, cement, pozzolans, water, air...), which are attached together with a cement paste. The “interface” zone is the most vulnerable link in the structure.

When compressing, that interface only helps to share compressive stresses from one aggregate to the following. That does not need extraordinary strength.

Under tension, the aggregates are attempting to pull out from each other, and the glue is what keeps the whole system jointly. Since it is extremely weaker than the aggregates, it is where the failure begins at much lower stresses.

Question No. 07

What is grouting?

⇒ Grout may be defined as a fluid form of concrete that is employed to seal voids.

Question No. 08

What is the recommended slump for the column?

⇒ 75 to 125 mm

Question No. 09

The bearing capacity of granite is generally?

⇒ 30 to 35 kg/cm²

Question No. 10

What are the specifications of the tamping rod employed in cube filling for the cube test ?

⇒ According to the IS code 2386, a 16 mm steel rod with a rounded edge

Question No. 11

What is the minimum curing period?

⇒ IS 456 – 2000 recommends that the curing duration of concrete must be at least 7 days in the case of Ordinary Portland Cement, and at least 10 days for concrete with Mineral admixtures.

It also recommends that the curing duration should not be less than 10 days for concrete of OPC exposed to dry and hot weather conditions and 14 days for concrete with mineral admixtures in hot and dry weather.

Question No. 12

What are the functions of a column in a building?

⇒ Column is a vertical member in a building whose Primary function is to support structural load and transfer it through beams. Upper columns transfer the load to the lower columns and finally to the ground through footings.

Question No. 13

What are the uses of Groynes?

⇒ They prevent or slow down erosion, and stop the longshore drift. This, however, can have bad knock-on effects somewhere near.

Question No. 14

What is the initial and final setting time of the ideal cement mix?

⇒ The initial setting time for the ideal cement mix is around 30 minutes for almost all kinds of cement. For masonry cement, it can be 90 minutes. The final setting time of the ideal cement mix should be 10 hours at max. For masonry cement, it shouldn't exceed 24 hours

Question No. 15

The portion of a brick cut across the width is called?

⇒ Bat

Question No. 16

What are the common ways of demolition?

⇒ The common ways of Demolition are as follows:

- a. Hydro-demolition
- b. Pressure Bursting
- c. Dismantling

Question No. 17

What reinforcements are used in the process of prestressing?

⇒ The major types of reinforcements used in prestressing are:

Spalling Reinforcement:

The spalling stresses lead to stress behind the loaded area of the anchor blocks. This results in the breaking off of the surface concrete. The most likely causes of such types of stresses are Poisson's effects strain interoperability or the stress trajectory shapes.

Equilibrium reinforcements:

This type of reinforcement is required where several anchorages exist and where the prestressing loads are applied in a sequential manner.

Bursting Reinforcements:

These kinds of stresses occur in cases where the stress trajectories are concave towards the line of action of load. In order to reduce such stresses, reinforcements in the form of bursting are required.

Question No. 18

What are the main reasons for conducting pull-out tests for soil nails?

⇒ There are mainly four reasons for this test:

- a. To check and verify the bond strength between soil and grout adopted during the design of soil nails. This is the main objective of conducting soil nail pull-out tests.
- b. To determine the bond strength between soil and grout for future design purposes. However, if this target is to be achieved, the test nails should be loaded to determine the ultimate soil/grout bond with an upper limit of 80% of the ultimate tensile strength of steel bars.
- c. To check if there is any slippage or creep occurrence.
- d. To check the elastic and plastic deformations of test nails. This is observed during the repeated loading and unloading cycles of soil nails.

Question No. 19

Explain QA & QC?

⇒ **Quality Assurance (QA):**

Quality Assurance is a set of activities for ensuring quality in the processes by which works are done. Quality Assurance is the process of managing quality.

Quality Control (QC):

Quality Control is a set of activities for ensuring quality in work. The activities focus on identifying defects in the actual products produced. Quality Control is used to verify the quality of the output.

Question No. 20

What Is The Ratio Of Grades M5, M7.5, M10, M15, M20, M25, M30, M35, M40?

⇒ The ratio of the different grades are as follows:

M5 – 1:5:10

M7.5 – 1:4:8

M10 – 1:3:6

M15 – 1:2:4

M20 – 1:1.5:3

M25 – 1:1:2

M30, M35, M40 – Design Mix Followed

Question No. 21

The length of each fish plate is?

⇒ 457.2mm

Question No. 22

Rail chairs are used to fix?

⇒ Double headrails

Question No. 23

What The Purpose Of The Gap In The Road On This Bridge?

⇒ Purpose of the gap in the road is to allow the road to expand and contract with temperature changes without causing damage or deformation to the road

Question No. 24

On Indian railways, the minimum formation width in embankment for a single line of board gauge, is?

⇒ 6.1m

Question No. 25

The device used for changing the direction of the engines is called a?

⇒ Turn table

Question No. 26

The device provided to prevent the vehicles from moving beyond the end of the rail at terminals is called?

⇒ Buffer stops

Question No. 27

What Are Moment Of Inertia And Its Importance In Civil Engineering?

⇒ The moment of inertia measures the opposition any kind of body will have against a certain momentum (along that same axis) trying to rotate that body.

28. The distance between the running edge of the stock and switch rails at the switch heel ,is called?

⇒ Heel clearance

29. What are various tests for checking brick quality?

⇒ We can use a water absorption test, hardness test, shape & size, crushing strength test, soundness test, etc. to check the brick quality. In the water absorption test, we dip the brick for 16 hours in water.

If the weight of the brick after dipping in water doesn't exceed 20%, it can be considered a first-class brick, if below 22.5% it can be considered a second-class brick, if below 25% it can be considered a third-class brick.

In the crushing test, its crushing strength should be a minimum of 10 N/mm² for first-class bricks, and 7.5 N/mm² for second-class bricks.

In the hardness test, we scratch the brick with nails. It should be scratch free. In the soundness test, we check the metallic sound by striking two bricks with each other

Question No. 30

The distance between the adjacent faces of the stock rail and the check rail , is called?

⇒ Flange way clearance

Question No. 31

What is void ratio?

⇒ The void ratio is the ratio of the volume of voids to the volume of solids.

Question No. 32

Stock rails are fitted

⇒ Against tongue clearance

Question No. 33

The switching angle is the angle subtended between the gauge faces of the?

⇒ Stock rail and check

Question No. 34

Explain what is Critical Path Method (C.P.M)?

⇒ Critical Path Method is strategy and method of representing the respective tasks and activities involved in the construction through a symbolic diagram.

Question No. 35

How Do You Determine the Specific Gravity Of Cement?

⇒ Cement is usually purchased as a powdery substance that is mixed with sand, aggregate, gravel, and water to form concrete. Since the cement itself is usually a powder, it is hard to measure a standard value for its specific gravity.

In addition, since cement is usually not used by itself, knowing its specific gravity is not particularly useful.

Question No. 36

A more useful question is “What is the typical density of concrete?”

⇒ A rule of thumb answer is that normally cured concrete has a density of about 150 pounds per cubic foot.

This includes the weight of the cement, sand, aggregate, and that part of the water that chemically binds with the cement to form the concrete. Since water weighs about 62.4 pounds per cubic foot, concrete is about 2.4 times as heavy.

Thus, the specific gravity of concrete is about 2.4. If you took cement and mixed it with water, you would eventually have a hard lump of useless cement and it would also have a specific gravity of between 2 and 2.4.

Question No. 37

The distance between the running face of the stock rail and the toe of the tongue rail is known as?

⇒ Throw of switch