

SHREE SATHYAM COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CE 6401 CONSTRUCTION MATERIALS
QUESTION BANK

PART - A

UNIT I STONES – BRICKS – CONCRETE BLOCKS

1. Why you choose stone as a building material?
2. Write down the characteristics of good stone?
3. List out the types of tests on stones.
4. List out the tests on bricks?
5. Define the term frog.
6. Explain deterioration and preservation of stone work?
7. List out the names of bricks for special use.
8. Explain light weight concrete blocks?
9. What is the standard size of brick used for construction?
10. How will you classify bricks? Write down the types of bricks?
11. Write down the processes in manufacturing of clay bricks?
12. What is meant by efflorescence in bricks? How can it be removed?
13. What is meant by hollow blocks? Mention its applications.
14. State any four advantages of bricks as compared with stones.
15. List the different types of refractory bricks?
16. Give the different classifications of stones, giving an example of each.
17. How will you manufacture concrete blocks? Explain the procedure in detail.
18. Write down the dimensions and tolerances in the concrete blocks according to B.I.S.
19. How will you classify the concrete blocks? Mention its names.
20. What are the usual tests prescribed for concrete blocks?

UNIT II LIME – CEMENT – AGGREGATES – MORTAR

1. Mention the different kinds of lime available for use in construction works.
2. What is meant by hydration of cement? What is its importance?
3. What do you understand by bulking of sand?
4. List the ingredients of cement.
5. Give the composition of Ordinary Portland cement.

6. State the functions of sand in a mortar.
7. What are Bogue's compounds in cement? State its functions.
8. Differentiate Fat lime from Hydraulic lime.
9. How do you proceed to get (a) lime putty (b) quicklime (c) slacked lime
10. How do you prepare lime mortar?
11. How do you store lime and what are the precautions in handling lime?
12. List out the types of tests for lime. Give some examples.
13. List out the various grades of cement in India.
14. Write down the mechanics of setting of cement.
15. Write down the formula for lime saturation factor (LSF).
16. What are the industrial byproducts of cement?
17. What do you mean by setting time of cement?
18. What are the required chemical and physical characteristics of flyash?
19. How will you classify sand for making concrete?
20. List out the tests for quality of sand. Explain any one of them.
21. What do you mean by aggregate abrasion value?
22. Write down the tests for coarse aggregate?
23. Write down the general requirements of mortars?
24. What are the tests prescribed for mortar?
25. What are the precautions to be taken in the use of mortars?

UNIT III CONCRETE

1. Define concrete.
2. List any three reasons why concrete is used as a building material.
3. Define bleeding.
4. Define segregation.
5. What are the steps adopted to control bleeding?
6. Define workability. What are the factors that affect the workability of concrete?
7. Mention the steps adopted to control segregation of concrete.
8. What are the factors affecting proportioning of concrete mixes?
9. Define mixing of concrete.
10. Define curing of concrete.
11. What are admixtures?
12. Differentiate between nominal mix and design mix.
13. Name the methods to measure the workability of concrete.
14. Define compaction factor.
15. What is Vee Bee consistometer?

16. Define batching.
17. Define shrinkage and creep.
18. Mention the values of different types of slump and their usages.
19. Differentiate between HSC and HPC.
20. What is self-Compacting Concrete?

UNIT IV TIMBER AND OTHER MATERIALS

1. Define seasoning of Timber.
2. List out the defects in timber.
3. What are the causes of decay of wood work?
4. What is veneer plywood?
5. Define annealing of steel.
6. Mention the market forms of steel.
7. What is anodizing of aluminium?
8. What are the available forms of aluminium?
9. Describe the composition of duralumin.
10. What are the methods through which galvanized coatings is given to GI sheets?
11. What are the paints commonly used in building construction?
12. Name the basic components of paints?
13. What is pigment volume concentration number?
14. What are the considerations in choosing paints?
15. Define distempers.
16. Mention the types of varnishes.
17. Differentiate between dry distemper and oil bound distemper.
18. Define covering capacity of paints.
19. Define blown bitumen.
20. What is penetration of bitumen?

UNIT V MODERN MATERIALS

1. What are the constituents of Glass?
2. What are the properties of Glass?
3. What are the uses of Glass?
4. What is the characteristic feature of ceramic materials?
5. What is Sealent and where it is used?
6. List the uses of ceramics?
7. Write a short note on FGRP?
8. What are the uses of FGRP?

9. Write any four properties of clay products?
10. What are the uses of Clay products?
11. State any four properties of Refractories?
12. Write a short note on Refractories?
13. What do you mean by composite materials?
14. What are the types of composite materials?
15. What are laminar composites?
16. What are the applications of laminar composites?
17. What is Geo Membrane?
18. What are the uses of Geo membrane?
19. Define Fibre textile?
20. What do you mean by Earth reinforcement?

PART - B

UNIT I STONES – BRICKS – CONCRETE BLOCKS

1. Explain the various tests to be conducted on stones to determine their suitability.
2. What are the various agencies which tend to reduce the life of a building stone?
3. What are the operations involved in the making of bricks? Explain them.
4. What are the characteristics of first class bricks?
5. Discuss the criteria for selection of stones as a building material.
6. Briefly discuss the defects and preservation of stones.
7. Briefly explain the tests conducted on bricks for their suitability for construction work?
8. List out the types of special bricks? Briefly explain any four of them.
9. What do you mean by refractory bricks? Briefly explain the varieties of it?
10. Write brief notes on cement, concrete blocks and light weight concrete blocks?
11. What is the significance of burning in the manufacture of brick? With neat sketches explain any two methods of burning of bricks indicating the suitability and advantage of each method.

UNIT II LIME – CEMENT – AGGREGATES – MORTAR

1. Describe the dry and wet process of manufacture of cement with flow diagram.
2. Enumerate the methods of preparation of lime mortar. Describe any two major tests to determine the quality of lime.
3. Enumerate the procedure of manufacture of lime mortar.
4. What are the different types of lime mortar? Mention their properties.

5. What is grading of aggregates? How does it affect the properties of concrete?
6. Describe the operations involved in the manufacture of lime.
7. What are the various ingredients required for manufacturing cement? State their functions.
8. Briefly explain the various types of cement produced in India.
9. Explain briefly about the test conducted on cement to find its properties?
10. Explain how the following tests are conducted on aggregate; as per IS codes:
 - (a) Crushing strength
 - (b) Impact strength
 - (c) Flakiness index and Elongation index
 - (d) Abrasion resistance

UNIT III CONCRETE

1. a) Explain any three tests for fresh concrete in detail.
b) Explain any three tests for hardened concrete in detail.
2. Explain the design procedure for IS methods in manufacturing concrete.
3. Design the concrete mix for the following data: characteristic compressive strength=20mpa, maximum size of aggregate =20mm (angular), degree of workability =0.9CF, degree of quality control =good and type of exposure=severe. Water absorption by CA =0.5% and moisture concrete FA=2.0%. Assume any suitable missing data.
4. a) Explain the batching process of concrete.
b) What are the methods of transportation of concrete? Explain them.
5. a) Explain finishing method in concrete surfaces. b) Explain the methods of pumping of concrete.
6. Describe the importance of curing? When should it be commenced? For how long should it be continued?
7. What are the reasons for the cracking of concrete and how does it affect durability.
8. What do you understand by carbonation of concrete? How is it tested?
9. a) Describe the hydration reaction of important Bogue's compounds indicating the products of hydration.
b) What are the various factors which affect the workability of concrete?
10. a) Write in detail about Self Compacting Concrete. b) Write in detail about High Strength Concrete.

UNIT IV TIMBER AND OTHER MATERIALS

1. (a) Explain in details the types of paint works in buildings. (b) Explain the consideration in choosing paints.
2. What are the advantages of aluminium in construction?
3. Explain the types of hot-rolled steel sections and cold formed steel sections.
4. What are tests made for steel used in reinforced concrete construction?
5. Explain in details heat treatment of steel.
6. Explain any three common industrial product of timber.
7. Explain in detail the causes of decay of wood work and their preservation.
8. Explain in defects in timber with suitable diagrams.
9. Write in detail about the process of seasoning of timber.
10. Write about the manufacture of TMT bars.

UNIT V MODERN MATERIALS

1. What is Glass? Explain the various properties of Glass?
2. Describe the process of manufacturing of Glass? What are the Uses of glass in construction industry?
3. What are the classifications of Glass?
4. Write a short note on Ceramic products? What are the various applications of ceramic products?
5. Explain in detail about Reinforced Plastics? What are the properties and uses?
6. Explain in detail about Composite materials and its Uses?
7. Explain in detail about Refractories? What are the different types of refractory Bricks?
8. What are Geosynthesis? How are they classified? What are the advantages & applications?
9. What is Terra cotta? How it is manufactured?
10. Write in detail about Earth reinforcement using Geomembrane?