

# DEPARTMENT OF CIVIL ENGINEERING

**SUB CODE & SUB NAME: CE 6401 CONSTRUCTION MATERIALS**

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## **UNIT-I: - STONES – BREAKS – CONCRETE BLOCKS**

### **PART A ( 2MARKS)**

1. What are the classifications of rocks.
2. What is the difference between physical classification & chemical classifications.
3. What is meant by Natural bed of stone.
4. What are the lists for the stones.
5. What is meant by Affliction tests.
6. What are the criteria for selection
7. What is meant by Deterioration.
8. What are the characteristics of good building stone.
9. What is preservation of stone work.
10. What is the reason for the decrease in the use of stones as building material.
11. What is the reason for the popularity of bricks as construction material?
12. What are the soil used for the manufacture of bricks should preferably.
13. What is the classification of bricks.
14. What are the ingredients of good brick earth.
15. How is are manufacturing of clay bricks.
16. What is the tests on bricks.
17. What is meant by compressive shre....
18. What is meant of water absorption of bricks.
19. What is meant by efflorescence.
20. What is the special use for bricks.
21. What is meant by refracting bricks.
22. What is the preparation of brick earth
23. What are the ingredients of cement.
24. What is meant by concrete blocks.
25. Define light weight blocks.
26. PART B ( 16 marks )
27. Explain Classification of rocks.
28. Briefly explain Tests for stones.
29. Explain criteria for selection of stones.
30. Briefly explain deterioration and preservation of stone work.
31. Briefly explain classification of bricks.
32. Explain operator diagram for preparation of brick earth
33. Explain in detail about test on bricks
34. Explain water absorption efflorescence test
35. Briefly explain additives in the manufacture of bricks.
36. 10.Explain bricks for special use and refraction brick.
37. 11. Explain in detail heat sketches for manufacture of cement.
38. 12. Explain in detail about ingredients of cement blocks.
39. 13. Explain in detail for preparation of concrete blocks.
40. 14. Explain in detail for preparation of light weight concrete blocks.

## **UNIT-II LIME- CEMENT AGGRE GATES –MORTAR**

### **PART A (2 MARKS)**

1. What is meant by calcinations.
2. Define hydraulicity.
3. What are the different types of limes..
4. What are the classification of limes .
5. What is constituents of lime stones
6. What are the uses of limes.
7. What are the difference lists for lime stones
8. How to preparation of lime mortar
9. What are the ingredients of cement.
10. What are the types of cement.
11. What is grades of cement.
12. What are the properties of cement.
13. How to preparation of cement mortar.

14. What is meant by hydration.
15. How to calculate the compressive strength
16. How to calculate the tensile strength.
17. What is fineness of cement.
18. Define soundness.
19. Define consistency.
20. What is meant by setting time.
21. What are the industrial by products.
22. What is meant by fly ash
23. What are the sources of natural stone aggregates.
24. What is meant by flakiness index.
25. What is meant by elongation index.
26. What is meant by sand bulking
27. Define abrasion resistance.
28. What is grading.

**PART B (16 MARKS)**

1. Briefly explain with neat sketcher for manufacture of lime
2. Briefly explain in detail about classification of lime.
3. Explain different types of lime and uses.
4. Briefly explain constituents of lime stone.
5. Briefly explain with neat sketcher for manufacture of cement.
6. Explain in detail about types and grades of cement.
7. Briefly explain properties of cement and cement mortar.
8. Define Hydration (4).
9. How to calculate compressive strength and tensile strength (6).
10. What are the difference between compressive and tensile(6).
11. Briefly explain laboratory test for fineness soundness and consistency of cement.
12. Explain setting time of cement and industrial by products.
13. Discuss natural stone aggregates (6).
14. with neat sketches explain abrasion resistance (10).
15. Explain time following details-
 

a. (a) Crusting Strength	(4)	(b) Impact Strength	(4)
b. (c) Flakiness Index	(4)	(d) Elongation Index	(4)
16. Explain detail about grading and sand bulking

**UNIT III CONCRETE**

**PART A (2 MARKS)**

1. Define concrete.
2. List out the ingredients of concrete.
3. What are the manufacturing process.
4. What is meant by batching plants.
5. What is meant by RMC.
6. List out the properties of fresh concrete.
7. Define slump.
8. What is flow and compaction factor.
9. List out properties of hardened concrete.
10. What is compressive strength
11. What is tensile strength
12. What is shear strength
13. Define modulus of rupture.
14. What are the lists on converter.
15. List are the mix portions of concrete
16. What is the mix proportioning.
17. What is BIS method.
18. What is meant by high strength concrete.
19. Define HPC.
20. What is meant by self Compacting concrete.
21. List out other types of concrete
22. What is meant by durability of concrete
23. Differentiate between HSC and HPC.
24. What is meant by workability of concrete
25. What is meant by water cement ratio.

### **PART B (16 MARKS)**

1. Explain the laboratory procedure to Concrete. manufacture process
2. Explain the laboratory procedure to determine the batching plants.
3. Explain how do you prepare RMC.
4. Briefly discuss the properties of fresh concrete
5. Explain with neat sketches the types of joints which are to be provided in concrete strainers
6. Describe various methods adopted for determining the volumetric proportions of various components of concrete.
7. How are pre-cast concrete products prepared.
8. Explain the following details.
9. Compressive strength (4)
10. Tensile strength (4)
11. Shear strength (4)
12. Modulus of rupture (4)
13. Briefly explain about what are the tests to be conducted for concrete.
14. Explain what are the mix specification and mix proportioning.
15. Explain the detail in BIS method of concrete mixing.
16. Explain high strength concrete and HPC.
17. Briefly explain self compacting concrete
18. Explain other types of concrete and durability of concrete

### **UNIT IV TIMBER OTHER MATERIALS PART A (2 MARKS)**

1. Define timber.
2. What is meant by cambium layer.
3. How are trees classified.
4. Enumerate the various defects in timber.
5. What are the market forms of timber.
6. List out the industrial timber.
7. Write a critical note on veneers.
8. What are ply woods.
9. What is meant by seasoning of timber.
10. Why is artificial seasoning adopted.
11. compare material seasoning with kind seasoning .
12. What is meant by thermocole.
13. Write a critical note on panels of laminates.
14. Describe the various processes adopted to manufacture steel.
15. State the various uses of steel.
16. State the defects in steel.
17. Enumerate the various market forms of steel.
18. State the properties of aluminum
19. Mention the characteristics of aluminum as an important building materials.
20. What are the different forms of aluminum
21. Enumerate the different types of paints.
22. What is meant by cellulose paint.
23. 23.What are the ingredients of a varnish.
24. Enumerate the properties of distempers
25. Write short notes on bitumen.

### **PART B (16. MARKS)**

1. Describe the preservatives which are commonly used in the process of preservation of timber.
2. Explain the process of natural seasoning mention its advantages and disadvantage.
3. What are fiber board's? How are they manufactured! how are they clarified! what are their uses?
4. Describe the various processes adopted to manufacture steel
5. Discuss the economics of using aluminum products
6. Explain the manufacturing process of aluminum.
7. Describe the process of manufacturing glass.
8. Explain the importance of glass as an construction material illustrate your answer by giving for of the recent developments in the glass industries.
9. Mention etc objects of painting and point out the characteristics of an ideal pain.

10. Discuss the important points to be noted before the process of
11. painting is started.
12. Mention the objects of varnishing and point out are characteristics of
13. an deal varnish.
14. What are the ingredients of varnish? describe briefly each of them.
15. Mention the usual defects which are found in the painting work.
16. Write short notes on.
 

(a) Turpentine	(4)	(b) Cellulose paint	(4)
(c) Cement paint	(4)	(d) Solvents for	(4)

## **UNIT V MODERN MATERIALS.**

### **PART A (2 MARKS)**

1. Give classification and composition of glass.
2. State the general properties of glass.
3. Mention the properties and uses of various types of glass.
4. What are glass blocks.
5. What is meant by ceramics.
6. Write short notes on sealants for joints.
7. What is meant by fiber glass reinforced plastic.
8. List out the clay products.
9. What is meant by refractories
10. 10. What are the uses of refractories
11. distinguish between ordinary and refractions.
12. What is meant by composite gateways.
13. List out the composite motives.
14. What are the types of composite materials.
15. List out applications of laminar composites.
16. What is meant by laminar composites.
17. Differentiate between composite and laminar composites.
18. What is meant by fiber textiles.
19. What are the user of fiber textiles.
20. What is meant by geo membranes.
21. What are the applications of geo membranes.
22. Differentiate between geo membranes and geo textile.
23. What is meant by geo textiles.
24. What are the advantages of geo textiles.
25. What is meant by earthier reinforce ment.

### **PART B (16 MARKS)**

1. Describe the process of manufacturing glass.
2. Describe the various treatment ts give to glass.
3. How is colored glass made? State the coloring substances which are used for getting deferent shades of color in glass.
4. What is ceramics? (4)
5. What are the advantage and disadvantages of ceramics materials (4).
6. List out uses of ceramics materials.
7. Detail about the sealants for joints and briefly explain.
8. Briefly explain fiber glass reinforced plastic.
9. With neat sketches ma of clay prod nets.
10. Briefly explain refractoriness and uses of industrial.
11. Write a critical note on composite materials and uses
12. What are the types composite gateways briefly explain and application of laminar composites.
13. Detail about Manu facility of fiber textiles and uses.
14. Distinguish between geo membranes and geo textiles for earth reinforcement.
15. Briefly explain geo textiles for earth reinforcement.