

UNIT 1 BUILDING MATERIALS AND CONSTRUCTION

1. Discuss the classification of stones.
2. Discuss the characteristics of good building stones.
3. Explain the tests performed on stones to find their properties.
4. Write various uses of stones in civil engineering works.
5. Describe the properties of good bricks.
6. Explain briefly the tests conducted on bricks in the laboratories to ascertain their qualities.
7. Write the principles to be adopted while construction of brick masonry.
8. What is bond ? Describe in brief various types of bond used in Brick Masonry.
9. What are the various types of cement. Explain briefly.
10. Explain the tests performed on Cement.
11. What are the requirements of good timber?
12. What is meant by seasoning of timber?
13. What is meant by curing of concrete? Why it is necessary and how it is made?
14. What do you understand by the term "Workability"? Explain briefly the factors that affect the workability of concrete.
15. What are the basic elements or components of a building?
16. Define foundation. Explain, with sketches, various types of shallow foundations.
17. What are the different types of stairs? With neat freehand sketch, Explain in brief.
18. What are the different types of doors?
19. Explain different types of bonds used in brick masonry with sketches.
20. Distinguish between plastering and pointing.
21. What are the different types of flooring ? Briefly explain any four of them.

UNIT 2 SURVEYING AND LEVELLING

1. Briefly explain the various approximate methods of measurement of distances.
2. Write short notes on EDM method.
3. Explain the various obstacles encountered during chain survey.
4. Explain the method of reciprocal levelling. When do you need it?
5. A 30 m tape used for measuring a line was found to be 30.01m at the beginning and 30.026 m at the end of the work. The area of plan drawn to a scale 1:1000 was found to be 5625 mm². Compute the correct area of the field. [Ans. 5631.752 m²]
6. A distance of 4666 m was measured by a 30 m chain. Later it was detected that chain was found 2.5 cms too long. If the chain was initially correct, determine the exact length that was measured.
7. Bring out the differences between prismatic compass and surveyor's compass.

QUESTION BANK FOR BCE & EM

8. Distinguish between
 - a. Magnetic meridian and true meridian.
 - b. Whole circle bearing and quadrantal bearing.
 - c. Fore bearing and back bearing.
9. What is local attractions? How it is detected in the field?
10. Convert the following reduced bearings into whole circle bearings:
 (i) N 65° E (ii) S 43° 15' E (iii) S 52° 30' W (iv) N 32° 42' W
11. The following fore bearings were observed for lines, AB, BC, CD, DE, EF and FG respectively.
12. Determine their back bearings:
 (i) 148° (ii) 65° (iii) 285° (iv) 215° (v) N 36° W (vi) S 40° E
13. In a closed traverse the following bearings were observed with a compass. Calculate the interior angles.

| Line | Fore bearing | Back bearing |
|------|-------------------|--------------|
| AB | 65° 0' □□□□□□□□ | 245° 0' |
| BC | 125° 30' | 305° 30' |
| CD | 200° 00' □□□□□□□□ | 20° 00' |
| DE | 265° 15' | 85° 15' |
| EA | 330° 00' □□□□□□□□ | 150° □□□□□□ |

ANS □ A = 85° 00' □ ∠B = 119° 30' □ C = 105° 30', ∠D = 114° 45', ∠E = 115° 15'

13. Write a short note Plane tables and related devices
14. What are the advantages and limitations of plane table surveying?
15. Write short note on reciprocal levelling.
16. The following staff readings were taken with a level, the instrument having been moved after third and sixth reading: The RL of first point is 100.00 m. Rule out a page of level book and enter the above readings. Calculate the RL of all points. Apply the checks.
 2.200, 1.620, 0.980, 2.250, 2.840, 1.280, 0.600 1.960, 1.450
17. Draw a neat sketch of theodolite and discuss its parts.