Uka Tarsadia University (Diwaliba Polytechnic)
Diploma in Environmental Engineering
Assignment (Basics of Civil Engineering- CV0002)

Unit-1 Introduction to civil Engineering

1. What is importance of civil engineering?
2. What is civil engineering? Enlist the branches of civil engineering.
3. Explain
   - Advanced construction engineering.
   - water resource engineering
   - building planning and drawing engineering town planning engineering structural engineering.
4. Write a short note on geotechnical engineering & environmental engineering. 5. Explain transportation engineering & surveying and levelling branch
6. Write a brief note on scope of civil engineering.
7. Enlist all the role of civil engineer
8. Explain in detail: (1) Structural engineering
9. Write short note on scope of civil engineering based on function

Unit-2: Introduction to Surveying & Leveling

1. Write the different uses of surveying.
2. State the uses of levelling.
3. Write the difference between plan and map.
4. What is contour surveying? State the uses of contour
5. Write the difference between surveyor compass and prismatic compass.
6. What are the common errors in linear measurement?
7. Define benchmark. Enlist different Bench Mark.
8. Write the difference between Height of Instrument method and Rise and fall method.
9. Write the difference between Whole Circle Bearing and Quadrantal Bearing.
10. What is offsetting? Explain types of offsets.
11. Explain briefly principle of surveying.
12. Draw the sketch of contour for (1) Hill (2) Pond (3) over hanging cliff (4) Steep Ground. 13. A chain was tested before starting the survey and was found to be exactly 20.00m. After measuring 350 m, it was again tested and was found to be 5.0 cm too long. After a total measurement of 600 m, again the chain was tested and was found to be 10.00 cm too long. Calculate actual length of the line.
14. A line was measured with a steel tape which was exactly 30 m at 20º C and a pull of 60 N and the measured length was 650.00 m. Temperature during measurement was 32º C and the pull applied was 100 N. Find the true length of the line if the cross sectional area of the tape was 0.02 cm^2, the coefficient of expansion = 0.0000117 and modulus of elasticity = 21× 10^6 N/cm^2.

15. Describe characteristics of contour.
16. Give the classification of surveying.
17. The following are the bearings of a closed traverse. Calculate the interior angles of the traverse

18.

Line/ રેખા	Fore bearing/ અગ્ર બેરીંગ	Back Bearing/ પશ્ચ બેરીંગ
AB	40°00'	220°00'
BC	120°00'	300°00'
CD	240°00'	60°00'
DA	340°00'	160°45'

19. Write the difference between trapezoidal rule and Simpson's rule.
20. The following consecutive readings were taken with a dumpy level on a continuously slopping ground. 0.6, 0.91, 1.89, 2.55, 3.88 and 3.99. The R. L. of first point was 100.00 m. Enter the above readings in a level book and calculate the reduce level (R.L.) of all points by H.I. (Height of Instrument) method and apply arithmetic check.
21. Convert the following whole circle bearing (WCB) to quadrant bearing (QB) : a) 220º b) 60º c) 189º d) 110º e) 95º f) 65˚ g) 242˚45' h) 328˚10 '
22. Convert the following quadrant bearing (QB) to whole circle bearing (WCB) : a) N 70˚15' W b) S 32˚15 ' E c) S 35˚30' W
23. Give the function of instruments used for linear measurements with appropriate sketch.
24. The following bearings were taken in traverse survey. Plot the traverse and calculate the interior angles of the traverse.

25.

Line	FB/અગ્રબેરિંગ	BB/પૂર્વબારિંગ
AB	150° 15'	330° 15'
BC	20°30'	200° 30'
CD	295° 45'	115° 45'
DE	218° 00'	38°00'
EA	120°30'	300°30'

26. Enlist methods of levelling and explain any one.
27. The following consecutive readings were taken with a dumpy level on a continuously slopping ground. 0.65, 0.92, 1.68, 2.56, 3.40 and 3.95. The R. L. of first point was 100.00 m. Enter the above readings in a level book and calculate the reduce level (R.L.) of all points by H.I. (Height of Instrument) method and apply arithmetic check.
28. Explain different correction for tape.

Unit-3:Basic Building planning & drawing

1. What is planning?
2. Define the term: (1) Grouping (2) Privacy (3) Roominess (4) Privacy (5) Circulation. (6) Aspect (7) Prospect.
3. Write the difference between plan and map.
4. Explain: (1) Plan (2) Sectional Elevation.
5. What are the requirements of a building?
6. What are the different principles of building planning? Explain any three with necessary sketch.
7. Explain orientation of building with neat sketches.
8. Draw a detailed plan, elevation and section of a 1 BHK residential building with a suitable data.

9. Explain Elevation
10. Explain in detail: (1) Circulation (2) Economy.
11. Write in detail about building bye-laws.
12. State all the points to be kept in mind while selecting a site for a residential building.

Unit 4: Building Construction And material

1. What is the function of plinth?
2. What is the function of Foundation?
3. What is the function of Chajja?
4. What is the function of beam?
5. What is the function of column?
6. What is the function of sill?
7. Give full form of DPC.
8. Give full form of RCC.
9. What is super structure?
10. What is sub-structure?
11. Explain composite structure.
12. Write uses of stones.
13. Explain frame structure.
14. Briefly explain type of brick, uses of brick.
15. Discuss classification of building based on occupancy.
16. Differentiate load bearing and framed structure.
17. What is lime? Briefly classify the lime.
18. What are qualities of good timber?
19. What are the various ingredients of concrete? Discuss all the ingredients.
20. Describe properties of cement concrete.

Unit 5: Transportation engineering

1. What is gauge? Enlist the types of gauge with its dimensions.
2. Give the difference between flexible and rigid pavement.
3. Write the advantages and disadvantages of road transport.
4. Write the advantages and disadvantages of rail transport.
5. Write the advantages and disadvantages of water transport.
6. Write the advantages and disadvantages of air transport.
7. Write the role of transportation in national development.
8. Draw a cross section of road in Embankment.
9. Draw a cross section of road in Cutting.
10. Draw a cross section of railway track and give the function of each compenent.
11. Define terms; Carriage way, Shoulder, Camber/Side slope, Kerb, Right of way.
12. Give the function of Rail, Sleeper, Ballast.
14. Briefly explain type of brick, uses of brick.

Unit 6: Water resource engineering

1. What are the different uses of water?
2. What are the applications of hydrology?
3. Write classification of dams according to structural behavior.
4. What are the advantages and disadvantages of Gravity Dams?
5. Define the terms: Runoff, Infiltration, Evaporation, Hydrology, Dam, Weir, Barrage, Confined Aquifer, Unconfined Aquifer.
6. What are the advantages and disadvantages of Rockfill Dams?
7. What are the necessity of conservation of water?
8. Explain gravity dam with neat sketch.
9. What is hydraulic structure? Enlist its different types and briefly explain any one.
10. Give the name of surface sources of water and sub surface sources of water.