

Part A 1) Define surveying

- 2) What are the types of surveying? What are the primary divisions of surveying ?
- 3) State the principle of surveying.
- 4) Why not “part to whole” Explain.
- 5) Differentiate plan and map?
- 6) What are source of errors?
- 7) What are the kinds of errors? Give example?
- 8) Classify surveying based on accuracy?
- 9) Mention the different types of chain
- 10) Which type of areas is best suited for chain surveying?
- 11) What are accessories used in chain surveying?
- 12) What are errors in chaining?
- 13) Define Ranging?
- 14) What are the types of Ranging?
- 15) Defines check lines
- 16) Define tie stations
- 17) What is cross staff? Mention its types?
- 18) What are the types of optical square?
- 19) What are the well conditioned and ill conditioned triangles?
- 20) What is mean by representative fraction of scale?
- 21) Why is it necessary to draw a scale on the map at the time of Plotting?
- 22) Calculate the sag correction for a 100m tape weighting 1.3kg and used under a pull of 9 kg in equal spans of 25m each.
- 23) A 100m tape is held 2m out of a line. What is the true length?

Part B

1. Explain the principles of surveying? With a simple sketch state the construction and use of a cross staff
2. a. Explain the different method of ranging with neat sketch. b. What are the accessories for a chain survey? Explain the functions of each.

- 3 How chain can be done on an uneven ground or sloping ground? Point out the advantages and disadvantages of this method.
- 4 Explain different corrections that can be applied to chain or tape.
- 5 Explain in details how a chain traversing can be done.
- 6 The distance between two points measured with a Gunter's chain was found to be 7500 links. The same distance was measured with an Engineers chain and was found to be 4930 feet. If the Gunter's chain was 0.25 Link too short, what was error in engineer's chain?
- 7 A chain was tested before starting a survey and was found to be exactly 20m and 20cm. The area of the plan drawn to a scale 8cm to 1cm was 220sq.cm. Find the true area of the field.
- 8 A 30m chain was found to be 0.1m too long after chaining 2400m. If the chain was correct before commencement of the work, find the true distance.
9. A 30m steel tape was standardized on the flat and was found to be exactly 3mm under no pull at 66°F. It was used in catenar to measure a base of 5 bays the temperature during the measurement was 92°F and the pull exerted during the measurement was 10kg. The area of the cross section of the tape was 0.08 sq.cm and the specific weights of steel is 7.86 g/cc. $\alpha = 0.0000063$ per 1°F and $e = 2.109 \times 10^{-6}$ kg/sq.cm. Find the true length of the line. 10A steel exactly 30m long at 18°C when supported throughout its length under a pull of 8 kg, A line was measured with a tape under a pull of 12 kg and found to be 1602 m. the mean temperature during the measurement was 26 C. Assuming the tape to be supported at every 30m, calculate the length of the line, given that cross sectional area of the tape is 0.04 sq.cm, the weight of 1 cc = 0.0077 kg, the co efficient of expansion = .000012 per 1°C, and the modulus of elasticity = 2.1×10^3 kg / sq.cm

UNIT-II

COMPASS SURVEYING

Part-A

1. Mention different types of compasses?
2. Define the terms a. Bearing b. Meridian c. Types of bearing and meridian
3. State the conversion rule for W.C.B to R.B
4. What is different between fore bearing and back bearing?
5. Convert i. $124^{\circ}30'$ to RB ii. $N10^{\circ}48'W$ to W.C.B
6. Find the bearing of line AB whose FB is $14^{\circ}48'$ and $S14^{\circ}40'E$
7. Define dip.
8. How dip eliminated?
09. Define magnetic declination. What are the types?
10. Find the magnetic declination at a place if the magnetic bearing of the sun at noon is i) $184^{\circ}00'$ ii) $350^{\circ}24'$

11. How local attraction can be eliminated?
12. Define traverse?
- \13. Define agonic and isogonic lines
14. How local attraction can be detected?
15. What are the types of traverse?
16. What is local attraction?
17. What are errors in compass survey?
18. Define the variation of declinations?
19. What is different between magnetic bearing and true bearing?
20. What are the temporary adjustments in compass?

Part – B

1. Explain with neat sketches the different types of compasses.
2. Differentiate prismatic and surveyor compass.
3. How closing error can be adjusted by using graphical method

Explain different method of plotting a compass traverse?

PLANE TABLE SURVEYING

Part-A

1. What is plane tabling?
2. Mention the suitability and unsuitability of plane tabling?
3. What are the equipments used in plane tabling?
4. What are the methods of plane tabling?
5. What are the accessories of plane tabling?
6. State two point problem and three-point problem.
7. What are the temporary adjustments in plane tabling?
8. State any two lahman's rule.
9. What is resector and resection?
10. When strength of fix is good?
11. When strength of fix is bad?
12. What are the errors in plane tabling?
13. What is back ray method?

14. What is triangle of error?

Part – B

1. Explain radiation method of plane tabling.
2. Explain intersection method of plane tabling.
3. Explain traversing method of plane tabling.
4. Explain two-point problem.
5. Explain three-point problem.
6. Explain strength of fix.

UNIT-III

LEVELING

Part – A

1. Define leveling.
2. What is the principle of leveling?
3. Mention the types of level.
4. Mention the types of leveling staves.
5. What are back sights and fore sights?
6. Define height of instrument.
7. Define intermediate sight.
8. Define change point.
9. Define BM. Explain its classification.
10. Define parallax. How is it eliminated in a level?
11. Mention the temporary adjustments of leveling.
12. Define level book.
13. Mention the method of reduction of levels.
14. Mentions the arithmetical check in rise and fall method and height of collimation method.
15. The observed staff reading on a staff held at A was 2.625m. the staff was found to be 15cm off the vertical through its bottom. Find the correct staff reading.
16. The staff reading on a certain peg is 3.820 when the staff is held 0.25m out of plumb bob in its total length of 4 m.find the correct staff reading for staff held VL.
17. How leveling can be done when the staff station was too long or too high?
18. How to level cross a pond or a lake? 19. How it's possible for leveling, if the BM lies above the line of collimation.

20. Mention the different types of leveling errors.
21. Find the refraction correction for a distance of 6000m.
22. Find the curvature correction for a distance of 9000m.
23. Calculate the combined correction for value 6000m & 9000m.
24. Find the distance of visible horizon from the top of the light house, 30.48m high.
25. What is reciprocal leveling? Mention the advantages?
26. Mention the permanent adjustments of a dumpy level.
27. Why is it necessary to bring the bubble to mid run just before taking the reading?
28. What is the need for balancing the fore sight and back sight distances?

Part – B

- 1) Explain the different types of levels and staves with neat sketches.
- 2) a) Mention the differences between height of collimation method and rise and fall method b) Record the following observations in the form of a leveling field book and obtain the reduced level of the each point. Give the necessary checks. Reading on inverted staff on point A whose reduced level is 52.345 = 3.565 Reading on staff on point B natural ground = 0.855

THEODOLITE SURVEYING

Part-A

1. What is tacheometric surveying?
2. List out the different methods of tacheometry.
3. Define stadia method of tacheometry.
4. List out the different stadia methods.
5. What are the three types of telescope used in stadia surveying?
6. What are the advantages of an anallatic lens used in tacheometer?
7. Compare tangential and stadia method.
8. What are the advantages and disadvantages of subtense method over stadia method?
9. What are the errors that may arise in stadia?
10. Give the precision of stadia survey.
11. Define stadia intercept.
12. What is the principle of stadia method?
13. What is tacheometry? www.studentsfocus.com
14. Give the use of Analytic lens.
15. What is the difference between theodolite and tacheometer?

16. Movable hair method is not adopted generally, why?
17. What is multiplying constant and additive constant?
18. Give the expression for RL of staff above the station in stadia fixed, when line of sight is inclined and staff normal to it.
19. Give the expression for V in tangential method.
20. What is a subtense bar?
21. In the fixed hair method, the line of sight is horizontal and staff is held vertically. If additive constant is zero, multiplying constant is 100 and distance two hairs is 2.7m, determine the horizontal distance between the two stations.
22. What is theodolite?
23. Mention the Classification of Theodolites.
24. Mention the parts of Theodolites
25. What is the use of peep sight and plummet?
26. Define the following terms: - a. Vertical axis b. Horizontal axis c. Line of sight / line of collimation. d. Axis of level tube e. Centering f. Transiting g. Swinging the telescope h. Face left / face right observation i. Telescope normal j. Telescope inverted k. Changing face.
27. What are the temporary adjustment of theodolite?
28. What are the advantage of method of repetition?
29. What is direction method?
30. What are the fundamental lines of a transit theodolite?
31. What are the sources of errors in theodolite?
32. Define latitude and departure
33. What is northing and southing?
34. What is easting and westing?
35. Define closing error.
36. What are methods of balancing the traverse?