

OCTOBER 2021

Time: Three hours

Maximum Marks: 75

- Note:
1. Answer ALL the questions in PART-A (1 mark each)
 2. Answer any ONE question from each unit in PART-B (3 marks each)
 3. Answer any ONE question from each unit in PART-C (10 marks each)
 4. The question paper contains TWO Pages

PART-A (1x10=10)

1. What are the main divisions of surveying?
2. Define base line.
3. What is true meridian?
4. What is meant by 'Dip of Magnetic needle'?
5. What are the various types of levels?
6. What is Back sight?
7. Write the formula for correction for curvature.
8. What is Profile leveling?
9. Expand GPS.
10. Define contour.

PART-B (3x5=15)

UNIT-I

11. Define check line and tie line.
12. Briefly discuss about errors in chaining.

UNIT-II

13. Explain about Reduced bearing.
14. What is local attraction? How will you detect it?

UNIT-III

15. Define Bench mark? What are its types?
16. What do you understand about balancing of back sight and fore sight?

UNIT-IV

17. Determine the combined correction for curvature and refraction if the radius of earth is 6370km.
18. Briefly discuss about errors in leveling.

UNIT-V

19. What is interpolation of contour? What are its methods?
20. Explain about differential GPS.

PART-C (10x5=50)

UNIT-I

21. (i) Draw a neat sketch of metric chain and Explain the components parts.
 (ii) Briefly Explain about Survey Stations.
22. Explain about various types of obstacles in chaining and ranging with sketches.

UNIT-II

23. The following are the fore bearings of the lines for a closed compass traverse ABCD. Determine their back bearings. Also determine included angles for all lines? and apply check?

FB of AB = N60°30' E

FB of BC = S78°10' E

FB of CD = S15°40' W

FB of DA = N20°50' W

24. The following bearings were observed in a closed compass traverse ABCDE.

Line	Fore Bearing	Back Bearing
AB	75° 30'	254° 30'
BC	115° 30'	297° 00'
CD	165° 30'	345° 30'
DE	225° 00'	44° 00'
EA	305° 00'	125° 30'

At which of stations would Local attraction be suspected? Find the corrected bearings of lines.

UNIT-III

25. Draw a neat sketch of dumpy level and indicate all the components parts in the sketch and Explain them in detail.
26. The following entries indicates level field book format. Find the missing values and RLs of all points.

Point	BS(m)	IS(m)	FS(m)	Rise(m)	Fall(m)	RL(m)
BM	1.450			-	-	420.690
1		X			1.670	X
2		4.320				417.820
3		X				417.520
4		X				
5	4.230		X			
6		2.380				
7		X			1.040	422.090
8			X		X	420.820

Apply arithmetical check.

UNIT-IV

27. Explain with neat sketch about the field procedure for Longitudinal sectioning.
28. (i) Explain about reciprocal leveling.
 (ii) Write short notes on 'effect of curvature and refraction'.

UNIT-V

29. (i) Explain the procedure for direct method of contouring with sketch.
 (ii) Explain any five characteristics of contour lines.
30. (i) Explain about any five maps used in GPS.
 (ii) What do you understand about the fundamentals of GPS?