KUMARAGURU
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Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1.   A diagonal scale is used to read………..dimensions

     The representative fraction $1/2500$ means that thus scale is

2.   a)   1cm = 0.25m   b)   1cm = 2.5m

     c)   1cm = 25m   d)   1cm = 250m

3.   In a whole circle bearing system S25°15'E corresponds to

     a)   115°15'   b)   154°45'

     c)   205°15'   d)   334°45'

4.   The imaginary line joining the equal elevations is known as _____

5.   A contour lines can cross one another on map only in the case of

     a)   A Vertical cliff   b)   A valley

     c)   A ridge   d)   An overhanging cliff

     The operation on turning the table so that all the lines on the paper are parallel to the

     corresponding lines on the ground, is called

6.
     a)   Leveling   b)   Centering

     c)   Setting   d)   Orientation

7.   The axis of the telescope level must be………………. to the line of collimation.

8.   An imaginary line tangential to the longitudinal curve of the level at the centre of the tube is

     called

     a)   Horizontal axis   b)   Vertical axis

     c)   Axis of the level tube   d)   Line of collimation

9.   The additive constant for the tacheometer is

     a) f/i b) i/f

c) f/d d) $f+d$

10. The multiplying constant for the tacheometer is, kept as

a) 20   b) 40

c) 60   d) 100

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. State the principles of surveying.

12. Define the term well conditional triangle. Give example.

13. Distinguish between true bearing and magnetic bearing.

14. Compare height of collimation method and rise and fall method of level reduction.

15. What are the different kinds of bench mark?

16. List out the methods of plane table surveying.

17. What are the temporary adjustments of Theodolite?

18. Define closing error?

19. List the merits and demerits of movable tangential tacheometry.

20. What are the sources of errors in stadia surveying?

PART C (5 x 14 = 70 Marks)

(Not more than 400 words)

Q.No. 21 is Compulsory

21. A tacheometer is set up at an intermediate point on a traverse course PQ and the following observations are made on a vertically held staff:

Staff station	Vertical angle	Staff intercept	Axial hair readings
P	$8°36'$	2.350	2.105
Q	$6°6'$	2.055	1.895

The instrument is fitted with an analectic lens and the constant is 100. Compute the length of PQ and reduced level of Q, that of P being 321.50 meters.

22. a) The following bearings were observed in a closed compass traverse.

Line	F.B	B.B
AB	80°10'	259°0'
BC	120°20'	301°50'
CD	170°50'	350°50'
DE	230°10'	49°30'
EA	310°20'	130°15'

Compute the corrected bearings and interior angles.

(OR)

22. b) (i) Discuss the advantages and disadvantages of plane table surveying over other method (7)

(ii) What are the different sources of errors in plane table surveying? (7)

23. a) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth, and eight readings: 2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 meters.

Enter the above readings in a page of level book and calculate the R.L of points if the first reading was taken with a staff held on a bench mark of 432.384m.

(OR)

23. b) A rectangular plot ABCD forms the plane of a pit excavated for road work. E is point of intersection of the diagonals. calculate the volume of the excavation in cubic meters from the following data:

Point	A	B	C	D	E
Original level	45.2	49.8	51.2	47.2	52.0
Final level	38.6	39.8	42.6	40.8	42.5

Length of AB = 50m and BC = 80m

24. a) The table below gives the lengths and bearings of the lines of a traverse ABCDE, the length and bearing of EA having been omitted. Calculate the length and bearing of the line EA.

Line	Length (m)	Bearing
AB	204	87°30'
BC	226	20°20'
CD	187	280°0'
DE	192	210°03'
EA	?	?

(OR)

b) Explain the different methods of determining the horizontal and vertical angles by using transit theodolite.

25. a) (i) When will you conduct reciprocal ranging? Explain the procedure for the same.

(7)

(ii) Explain the various classifications of survey.

(7)

(OR)

b) (i) A survey line ABC crosses a river, A and C being on the near and distant banks respectively. standing at D, a point 50 meters measured perpendicularly to AB from A, the bearings of C and B are 320° and 230° respectively, AB being 25 meters. Find the width of river.

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