

- Q.7 Which of the following maps requires smallest scale?
(a) Building (b) Forest
(c) Cadastral (d) Topographical
7. (d)
- Q.8 Which of the following problem cause negative error?
(a) Lower temperature at the time of measurement
(b) too long chain/tape
(c) sag in chain/tape
(d) none of these
8. (b)
- Q.9 Which of the following is not correct for standarization of chain?
(a) Metric chain standarized at pull of 80 N approx
(b) Invar tape standarized at accuracy of 1/2000 to 1/20000
(c) Chain should be standarized at temperature of 20°C approx
(d) Accuracy of 30 m chain is ± 8 mm
9. (b)
- Q.10 Hypantensual allowance for 30 m metric chain will be _____ (if θ is angle of slope in degree).
(a) $0.0015\theta^2$ (b) $0.0045\theta^2$
(c) $0.0075\theta^2$ (d) $0.0060\theta^2$
10. (b)
- Q.11 During the time of measurement 20 m chain found 15 cm long. If measured length is 2000 m, the corrected length is _____.
(a) 1985 m (b) 2007.5
(c) 2015 m (d) 1992.5
11. (c)
- Q.12 Accidental error is
(a) proportional to L (length)
(b) inversely proportional to \sqrt{N} (Number of observation)
(c) probability of occurrence is very high
(d) also known as compensating error
12. (d)

- Q.13** Length of 100 m measured over a sloping ground of (5 in 250). The corrected length is
(a) 99.95 m (b) 100.5 m
(c) 100.05 m (d) 99.5 m
- 13. (a)**
- Q.14** Sag correction is/are
(a) proportion of L (length of chain)
(b) inversely proportion to P_m^2 { P_m = pull at the time of measurement}
(c) always negative
(d) all of these
- 14. (d)**
- Q.15** Longest line measured in chain survey is
(a) Main line (b) Base line
(c) Check line (d) Tie line
- 15. (b)**
- Q.16** In optical square index glass is placed at an angle of
(a) 45° (b) 105°
(c) 90° (d) 120°
- 16. (b)**
- Q.17** Forest is an obstacle for
(a) chaining only
(b) ranging only
(c) both chaining and ranging
(d) neither chaining nor ranging
- 17. (b)**
- Q.18** In retrograde vernier scale
(a) vernier gaps are less than gap of main scale
(b) least count = $(2n - 1)s/n$
(c) n parts of vernier scale is $(n - 1)$ part of main scale
(d) n part of vernier scale is $(n + 1)$ part of main scale
- 18. (d)**

- Q.19** An old map was plotted to scale of 1 cm = 20 m. Over the years map has shrunk in such a way that 10 cm line shows 9 cm.
- (a) shrunk factor is 0.9.
 (b) shrunk scale is 1 in 2222.22
 (c) true dimension of area will be 4937.28 m² if present shrunk dimension of area of 10 cm²
 (d) all of these

19. (d)

- Q.20** A length off set is measured error of x meter which of the following is correct way of calculating maximum possible error in laying direction if scale used is 1 cm = 5 m.

(a) $\frac{x^2 + (l \sin \alpha)^2}{S^2} \leq 0.025$

(b) $\sqrt{\frac{x^2 + l \sin^2 \alpha}{S}} \leq 0.025$

(c) $\sqrt{\frac{x^2 + (l \sin \alpha)^2}{S}} \leq 0.025$

(d) $\frac{\sqrt{x^2 + (l \sin \alpha)^2}}{S} \leq 0.025$

20. (d)

- Q.21** The meridian which is taken approximate parallel to true meridian for a map/ some state agency is
- (a) grid meridian (b) arbitrary meridian
 (c) magnetic meridian (d) none of these

21. (a)

- Q.22** Imaginary line joins equal magnetic declination is
- (a) isogonic line (b) agonic line
 (c) isoclinic line (d) acclinic line

22. (a)

- Q.23** Diurnal variation is declination of meridian which occurs
- (a) on yearly basis (b) more at poles
 (c) more during night time (d) more during winters

23. (b)

Q.25 Match List-1 and List-2 with given code below.

List-1 (QCB)

- A. N 30°E
- B. S60° E
- C. S80° W
- D. N12°W

List-2 (WCB)

- 1. 260°
- 2. 120°
- 3. 30°
- 4. 348°

Code:

	A	B	C	D
(a)	4	2	3	1
(b)	1	3	2	4
(c)	2	3	4	1
(d)	3	2	1	4

25. (d)

Q.26 Consider the following Traverse and find out the bearing affected by local attraction

	Fore bearing	Back bearing
AB	30°	210°
BC	150°	332°
CD	240°	60°
DA	332°	152°

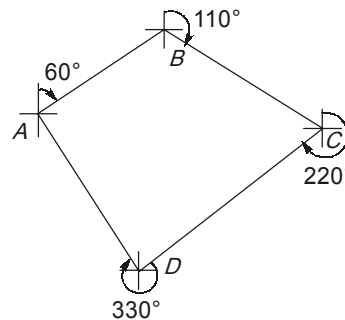
- (a) AB, BA, BC, CB
- (c) BC, CB, CD, BA

- (b) CD, DC, DA, AD
- (d) DA, AD, AB, BA

26. (c)

Q.27 Consider the following traverse

- (a) back bearing of BC is 290°
- (b) deflection angle of CD is 110°
- (c) included angle at B is 230°
- (d) all of the above



27. (d)

Q.28 In Prismatic compass

- (a) Box rotates, graduated ring fixed
- (b) sharp needle is used
- (c) 0° at North and 90° at south
- (d) reading occurs is QCB

28. (a)

Q.29 Bearing of sun measured at noon is 5° , the magnetic bearing of line will be _____ if true bearing is 112° .

- (a) 122°
- (b) 107°
- (c) 102°
- (d) 117°

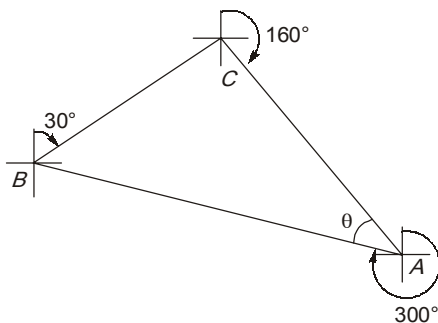
29. (d)

Q.30 In 1932 a line AB is measured at a magnetic bearing of $S12^\circ W$, with magnetic declination of $2^\circ E$. In 2024 the same line showing magnetic bearing of $S20^\circ W$. The magnetic declination in 2024 is

- (a) $8^\circ W$
- (b) $6^\circ E$
- (c) $8^\circ E$
- (d) $6^\circ W$

30. (d)

Q.31 For the given traverse, internal angle θ is



- (a) 90°
- (b) 40°
- (c) 160°
- (d) 60°

31. (b)

Q.32 In a traverse sum of latitude and departure comes out to be 2 m and -2 m respectively. The closing error and closing bearing is

- (a) 0 m, $N 45^\circ E$
- (b) $2\sqrt{2}$ m, $S45^\circ W$
- (c) $2\sqrt{2}$ m, $N45^\circ W$
- (d) $2\sqrt{2}$ m, $S45^\circ E$

32. (c)

Q.33 As per bowditch rule for applying correction for closing traverse

(a) Correction in latitude = $\frac{l}{\Sigma l} \times \Sigma L$

- (b) length and bearing both measured with precision
- (c) errors are considered to be accidental
- (d) all of the above

33. (d)

Q.34 Height of instrument at any point during levelling can be measured

- (a) Last RL – First RL
- (b) RI of benchmark + Back sight
- (c) Backsight – Fore sight
- (d) Backsight tintermediate sight

34. (b)

Q.35 Type of levelling used for establishment of center line of road

- (a) check levelling
- (b) fly levelling
- (c) reciprocal levelling
- (d) profile levelling

35. (d)

Q.36 Find out the incorrect Pair from given options for least count of different instrument used in surveying.

- (a) main plate of theodolite – 20''
- (b) Prismatic compass – 30'
- (c) Levelling staff – 5 mm
- (d) diagonal scale – 0.1 mm

36. (a)

Q.37 Consider the following statements and find out the incorrect statement

- (a) Correction for curvature always negative i.e. $\frac{D^2}{2R}$
- (b) Collimation error can be eliminated if instrument placed at centre to two staff positions
- (c) Error due to refraction is always positive
- (d) Sensitivity of bubble tube is proportional to radius of bubble tube

37. (c)

Q.38 The distance from horizon of earth from where 100 mm height light house is just visible

- (a) 35.7 km (b) 17.3 km
(c) 71.4 km (d) 28.2 km

38. (a)

Q.39 A bubble tube of a level has a sensitivity of 20" per 2 mm division. The difference in staff reading will be _____ mm if bubble deflected by 2 division from centre. Take $D = 100$ m.

- (a) 20 mm (b) 28 mm
(c) 35 mm (d) 12 mm

39. (a)

Q.40 Consider the following reading of reciprocal levelling

Instrument at	Reading at	
	<i>A</i>	<i>B</i>
<i>A</i>	1.500 m	0.500 m
<i>B</i>	2.600 m	1.800 m

The correct reading at *A* when instrument at *B* should be _____ m.

- (a) 1.800 m (b) 2.800 m
(c) 2.700 m (d) 0.900 m

40. (c)

Q.41 Consider following data of fly levelling,

1.350 m, 1.550 m, 2.500 m, 2.000 m, 1.000 m, 1.300 m the RL of final reading is _____ m if RL of BM is 100.000 m

- (a) 102.8 m (b) 100.000 m
(c) 99.7 m (d) 101.3 m

41. (b)

Q.42 Kapler telescope used in dumpy level

- (a) double concave lens (b) c o m b i n e d
convex concave lens
(c) double Plano convex lens (d) double convex
lens

42. (d)

- Q.43** Find out incorrect pair
(a) closely spaced contour – steep ground
(b) increasing RL towards center – hill
(c) intersecting contour – vertical cliff
(d) inverted V – valley line
- 43. (c)**
- Q.44** For a 4% gradient hilly area if contour interval taken as 40 m, then the horizontal equivalent should be taken as
(a) 870 m (b) 1000 m
(c) 980 m (d) 1250 m
- 44. (b)**
- Q.45** Most suitable contouring indirect method for large scale area is
(a) Cross sectional method (b) square method
(c) graphical method (d) none of these
- 45. (b)**
- Q.46** For changing the position of theodolite from face left to face right, required operation is
(a) 2 swinging
(b) 1 transit then 1 swinging
(c) 2 swinging then 1 transiting
(d) 2 transiting
- 46. (b)**
- Q.47** Which of the following is an ideal condition of theodolite?
(a) Axis of plate bubble axis is parallel to vertical axis
(b) Axis of altitude bubble is parallel to turnion axis
(c) Line of sight is perpendicular to horizontal axis
(d) Axis of altitude bubble is perpendicular to axis of telescope
- 47. (c)**
- Q.48** Lower most plate of levelling head assembly in theodolite is known as
(a) vertical circle (b) lower spindle
(c) tribatch (d) trivet
- 48. (d)**

- Q.49** Temporary adjustment of theodolite is
 (a) Centering – levelling – focusing
 (b) Focusing – levelling – centering
 (c) Levelling – focusing – centering
 (d) Centering – focusing – levelling
- 49. (a)**
- Q.50** For a circular curve of radius (R) and deflection angle (Δ), which of the following is correct
 (a) Mid ordinate $\rightarrow \left(R \cos \frac{\Delta}{2} - R \right)$
 (b) Length of tangent $\rightarrow \left(R \sin \frac{\Delta}{2} \right)$
 (c) Apex distance $\rightarrow \left(R \sec \frac{\Delta}{2} - R \right)$
 (d) Chord length $\rightarrow \left(2R \sin \frac{\Delta}{2} \right)$
- 50. (d)**
- Q.51** Three point problem in plane table survey is related with
 (a) Intersection method (b) Radiation method
 (c) Resection method (d) Traversing method
- 51. (c)**
- Q.52** Trough compass is used in plane table survey for
 (a) centering (b) levelling
 (c) orientation (d) sighting
- 52. (c)**
- Q.53** For an anallatic lens used in tachometer additive constant must be
 (a) 0 (b) 100
 (c) 50 (d) 200
- 53. (a)**
- Q.54** Consider the following ordinates taken at an interval of 15 m.
 3 m, 2 m, 4 m, 6 m, 5 m, 0 m.
 The area as per Simpson's $\frac{1}{3}rd$ rule is ____ m².
 (a) 277.5 m² (b) 285.8 m²
 (c) 212.6 m² (d) 252.5 m²
- 54. (a)**

- Q.55 For movement of both upper and lower plate of theodolite without relative movement is possible if
- (a) both upper and lower screw unclamped
 - (b) both upper and lower screw clamped
 - (c) only upper screw clamped and lower screw unclamped
 - (d) only upper screw unclamped and lower clamped
55. (c)



