

CE8351 SURVEYING

Important 13 Mark Questions

Part-B

1. What is meant by triangulation and describe classification of Triangulation?
2. A steel tape 20m long standardized at 55°F with pull of 98. 1 N was used for measuring a baseline. Find the correction per tape length, if the temperature at the time of measurement was 80 °F and the pull exerted was 156.96 N. weight of 1 cubic meter of steel = 77107 N. weight of tape = 7.85 N and $E = 2.05 \times 10^5 \text{ N/mm}^2$, coefficient of linear expansion of tape per °F = 6.2×10^{-6} .
3. Briefly explain the horizontal control and vertical control for Setting out.
4. The following reciprocal observations were made from two Points P and Q.
Horizontal distance between P and Q = 45128m
Angle of depression of Q at P = 6° 20"
Angle of depression of P at Q = 8° 10"
Height of signal at P = 6.97m
Height of signal at Q = 5.63m
Height of instrument at P = 1.27m
Height of instrument at Q = 1.34m
Calculate (i) the R.L of Q, if that of P is 1248.65m and
(ii) the average co-efficient of refraction at time of
Observations, Take $R \sin 1'' = 30.88\text{m}$
5. Describe the laws of accidental errors.
6. Find the most probable value of angle A from the following Observation equation: $A = 30^\circ 28' 40''$; $3A = 91^\circ 25' 55''$; $4A = 121^\circ 54' 30''$
7. Explain the various tape corrections to be made while calculating the length of the base. Find the most probable values of angles A, B, and C of triangle ABC from the following observation equations: $A = 68^\circ 12' 36''$, $B = 53^\circ 46' 12''$, $C = 58^\circ 01' 16''$
8. Enumerate the measuring principle and working principle of Electro optical surveying (Total station) with neat sketches.
9. Brief a comparison about microwave systems and electro optical system. Also bring out the important precautionary measures and maintenance of total station instrument.
10. Brief a comparison between microwave system and electro Optical system?

11. Explain in detail above the measuring principle working principle and sources of error in infrared and laser total station instruments.
12. With a suitable sketch, explain the salient features of hand held and geodetic receivers.
13. Explain the various segments comprising the functioning of GPS with neat sketches
14. Explain the different segment of GPS.
15. Explain the task of control segment in GPS.
16. What is compound curve? Explain the step-by-step procedure for setting out a compound curve?
17. Briefly explain the application of remote sensing.
18. What the various applications of hydrographic surveying?
19. Two straights T_1V and VT_2 of a road curve meets at an angle of 80° . Find the radius of curve which will pass through a Point P, 30 m from the P.I. (V), the angle T_1VP being 30° .
20. Explain the various sounding methods.
21. How Reconnaissance survey of railway project is conducted.
22. The chainage of P is 1618.8 m. Determine the chainage P.I., P.C. and P.T.
23. Explain in detail the methods of locating sounding by sextant and theodolite.