Subject - Survey - I

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Important Short Question 2 marks

① Define Plane Surveying and geodatic Surveying
② What do you mean by triangulation ?
③ What is base line of Survey ?
④ What is declimation ?
⑤ What are isogonic and agonic lines?
⑥ What is the principle of Compass Surveying?
⑦ What is orientation ?
⑧ How are centring and levelling done in plane-tabling Survey ?
⑨ What is levelling ?
⑩ What is Reduced level ?
⑪ Define level surface and Horizontal Plane.
⑫ What is line of collimation ?
⑬ What is Backsight reading(BS)?
⑭ What is fly levelling ?
⑮ What is Temporary bench mark ?
⑯ What is zero circle ?
⑰ What are the different type of chain ?
⑱ What is well-conditioned triangle ?
⑲ What is local attraction ?
⑳ Define reduced bearing.
㉑ What is transit theodolite ?
㉒ What are the function of a theodolite ?
㉓ What is deflection angle ?
㉔ What are latitude and departure ?
㉕ What is centring ?

Important long question 5marks

1. Describe briefly how plane Surveying differ from geodatic Surveying.
2. Describe the different type of chain and tape.
3. Explain the principle and use of an optical square.
4. Explain the error in chaining
5. Explain how a chain is tested and adjusted in the field.
6. What is orientation? what are the method of orientation and describes any one of them?
7. Write down about the component of plane table
8. State the different types of bench mark, mention the use of each category.
9. Explain ridge line, valley line, steep slope and flat slope with neat Sketch.
10. What is folding and unfolding of chain?
11. Write the procedural step in plane tabling.
12. Mention the various errors and its precautions taken in plane table Surveying.
13. Describe briefly the Source of error in levelling.
14. What is local attraction? How it is detected and adjust?
15. What are the method of plane tabling? Describe any of them with Sketch.
16. What are the advantages and disadvantanges of plane tabling?
17. Describe a dumpy level along with sketch.
18. What is temporary adjustment? How is it done?
19. State the uses of contour map.
20. What is the temporary adjustment of theodolite?

Important long question 10 marks

① What are the obstacles in chaining? Describe how will you overcome in the following cases of obstacles to chaining
(i) Chaining free but vision obstructed
(ii) Chaining obstructed but vision free

② To measure a base line, a steel tape 30m long standardised at 15°c with a pull of 15kg was used. Find the correction per tape length, if the temperature at the time of measurement was 20°c and pull exerted was 20kg. weight of 1 cubic cm of steel is 7.86 gm. wt of tape = 0.8 kg. $E = 2.1 \times 10^6$ kg/cm² coefficient of expansion of the tape per 1°c = 7.1×10^7

③ What is three point problem? Explain with neat sketch and procedure of solving the problem

④ The following bearing were taken in closed traverse ABCDA

Line	f.B	B.B
AB	124°30'	304°30'
BC	68°15'	246°00'
CD	310°30'	135°15'
DA	200°15'	17°45'

At what Station do you suspect local attraction find out corrected bearing of the lines and also calculate the included angles.

⑤ State and explain with sketches the trapezoidal and Simpon's rules.

⑥ Explain the different step in the method and traversing in plane table survey.

⑦ what is orientation? what are the methods of orientation? Describe the methods with a sketch.

⑧ The following consecutive reading were taken with a dumpy level along a chain line at a common interval of 15 m. The first reading was at a chainage of 165 m where the RL is 98.085. The instrument was shifted after the fourth and ninth readings. find the RL of all the points by the collimation system.

3.150, 2.245, 1.125, 0.860, 3.125, 2.760, 1.835, 1.470, 1.965, 1.225, 2.390 and 3.085 m.

⑨ when is reciprocal levelling done? Describe the method along with a sketch.

⑩ Describe the characteristic features of contour line with neat sketch

⑪ what are the different method of contouring? Describe any method along with sketch.

⑫ A railway embankment of formation width of 8m and side slope 2:1 is to be constructed. The ground level along the centre line is as follows

Chainage —	0	50	100	150	200	250
GL (m) —		115.75	114.35	116.80	115.20	118.50	118.25

The embankment has a rising gradient of 1 in 100 and the formation level at zero chainage is 115.00. Assuming the ground is level across the centre line, compute the volume of earth work.

⑬ Describe process of measuring the horizontal angle.

⑭ Describe the process of permanent adjustment and temporary adjustment of theodolite.

⑮ Describe how you would measure vertical angle and deflection angle.