Reg. No. : | | | | | | | | | | | | |

Question Paper Code: 1033371

B.E. / B.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024

Third Semester

Civil Engineering

U20CE303 – ENGINEERING SURVEY

(Regulation 2020)

Time: Three Hours Maximum: 100 Marks

Answer ALL questions

PART – A (10 x 2 = 20 Marks)

1. What are the fundamentals principles of surveying?

2. A 50 m tape is supported only at its ends and under a steady pull of 6 kg. If the tape weighs 0.91 kg. Determine the corrected distance between the ends of the tape.

3. Write any two methods of booking a reduced level?

4. Differentiate quick and convenient method of measuring distances indirectly.

5. Define tachometry surveying.

6. How to measure vertical angle in case of inclined line of sight?

7. What are the curve settings types?

8. Outline the steps involved in triangulation.

9. Differentiate between static and kinematic GPS surveying.

10. Predict any two common applications of drone surveying in civil engineering.

PART – B (5 x 16 = 80 Marks)

11. (a) What are the two primary branches of surveying, and how do they differ? Provide a etailed explanation of each. (16)

(OR)

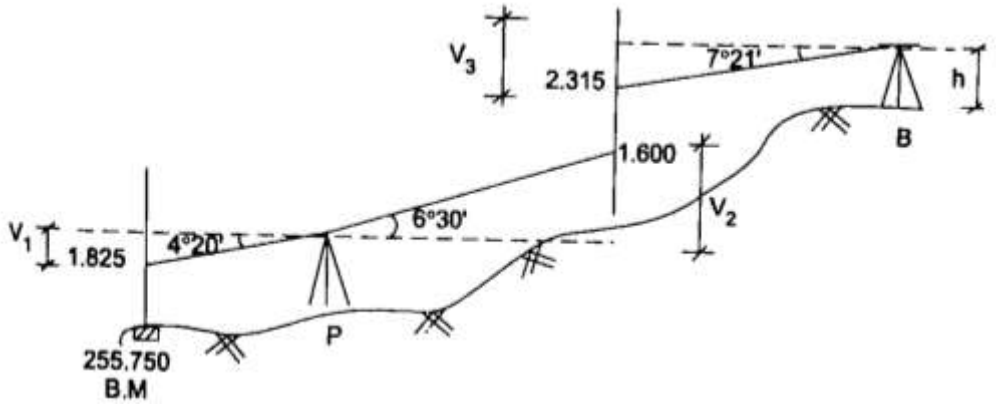
(b) The following consecutive readings were taken with a dumpy level along a chain line at a common interval of 15 m. the first reading was at a chainage of 165 m where the RL is 98.085. The instrument was shifted after the forth and ninth readings. 3.150,2.245,1.125,0.860,3.125,2.760,1.835,1.470,1.956,1.225,2.390 and 3.035 m Find the RL of all points by 1. The collimation system and 2. Rise fall method. (16)

12. (a) Explain the different systems of tacheometry and discuss their merits. (16)

(OR)

(b) The following observations were taken with a tachometer fitted with an analytic lens the staff being held vertically. The constant tachometry is 100. (16)

Staff at	Ht. of Inst	Staff station	Vertical angle	Staff readings	Remarks
P	1.255	BM	-4°20'	1.325,1.825,2.325	-
p	1.255	A	+6°30'	0.850,1.600,2.350	255.750
B	1.450	A	-7°24'	1.715,2.315,2.915	-



13. (a) Write a detailed note on fixed and movable hair method with help of diagram. (16)

(OR)

(b) What do you mean by contouring? Describe its characteristics with neat sketch and its uses. (16)

14. (a) A circular curve has a 200 m Radius and65 º deflection angle. What is its degree by arc chord definition. Also calculate (i) Length of the curve (ii) tangent length (iii) Length of long chord (iv) Apex distance (v) Med ordinate .Assuming 20 m arc or chord length . (16)

(OR)

(b) Illustrate with neat sketches the four different types of layouts, explaining their unique characteristics and practical applications. (16)

15. (a) Summarize Satellite Configuration, Signal Structure, Orbit and Representation with neat sketch. (16)

(OR)

(b) Demonstrate in detail the concept of Hydrographic Surveying with a focus on Tides and Mean Sea Level (MSL). (16)

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