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Fifth Semester B.E. Degree Examination, Dec.2013 / Jan. 2014
Mine Surveying - II

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

PART - A

1 a. With usual notation show that D = Ks + C.   **(08 Marks)**
   b. Two distances of 20m and 100m were accurately measured out and the intercepts on the staff between outer stadia wires were 0.196m at the former distance and 0.996m at the latter. Calculate the tacheometric constant for horizontal line of sight.   **(12 Marks)**

2 a. Define i) Triangulation survey   ii) Well condition triangle.   **(06 Marks)**
   b. Name the different types of corrections applied during the measurement of base line using a tape and calculate the sag correction for a 30m steel tape under a pull of 10kg in 3 equal spans of 10m each. Weight of 1 cubic cm of steel = 7.86 gram. Area of cross section of tape = 0.08sq cm.   **(14 Marks)**

3 a. Define a transition curve.   **(04 Marks)**
   b. The angle of deflection from one straight portion of a railway to another is 40^0. The straights are connected by a curve having a radius of 10 chains. Calculate i) Tangent distance   ii) Main chord   iii) The rise   iv) Length of the curve.   **(16 Marks)**

4 A railway embankment is 10m wide with side slopes 11/2 to 1. Assuming the ground to be level in a direction transverse to the centre line, calculate the volume contained in a length of 120m, the centre height at 20m intervals being in meters 2.2, 3.7, 3,8, 4.0, 3.8, 2.8, 2.5.   Using
   i) Trapezoidal rule   ii) Prismoidal rule.   **(20 Marks)**

PART - B

5 a. Explain the purpose of correlation survey.   **(08 Marks)**
   b. B and C are two plumb lines hung in a vertical shaft. The azimuth of BC is 353^0 45' 30" and the distance between the wires is 2.145m. A theodolite is set up at a point 'A', situated to the east of the southern prolongation of BC, the angle BÂC is found to measure 0^0 1' 50". AB measure 2.262m and AC 4.407M. Find the azimuth of the line CA.   **(12 Marks)**

6 a. Explain with a neat sketch, the tape triangulation method of stope surveying.   **(10 Marks)**
   b. Explain with a neat sketch, the ray method of stope surveying.   **(10 Marks)**

7 Explain in detail the method of measurement of surface subsidence to determine the horizontal and vertical subsidence.   **(20 Marks)**

8 Give the following equations :
   A = 42^0 36' 28" wt.2
   B = 28^0 12' 42" wt.2
   C = 65^0 25' 16" wt.1
   A + B = 70^0 49' 10" wt.2
   B + C = 93^0 37' 58" wt.1. Find the most probable value of A, B and C.   **(20 Marks)**

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