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10MN45

# Fourth Semester B.E. Degree Examination, June/July 2014
## Mine Surveying – I

Time: 3 hrs. Max. Marks:100

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



### PART – A

1 a. Define mine surveying. Explain the principles of it. **(08 Marks)**

b. The length of a survey line was measured with a 20 m chain and was found to be equal to 1200 m. The length was again measured with a 25 m chain and was found to be 1212 m. On comparing the 20 m chain with the test gauge, it was found to be 10 cm tooling. Find the actual length of 25 m chain used. **(12 Marks)**

2 a. Explain with a neat sketch, the working of optical square in chain surveying. **(10 Marks)**

b. In passing an obstacle in the form of a pond, station A and D, on the main line, were taken on the opposite sides of the pond. On the left of AD, a line AB, 200 m long was lard down and a second line AC, 250 m long, was ranged on the right of AD, the points B, D and C being in the same straight line, BD and DC were then chained and found to be 125 m and 150 m respectively. Find the length of the line AD. **(10 Marks)**

3 a. Differentiate between :
i) Bearings and angles
ii) Whole circle being and reduced being
iii) Dip and Declinators
iv) Fore bearing and beck being. **(12 Marks)**

b. The magnetic bearing of a line AB is S28°30′E. Calculate the true bearing if the declination is 7° 30′ West and 4° 30′ East. **(08 Marks)**

4 a. Name the various accessories used in plane table survey and explain their functions. **(10 Marks)**

b. Name the various methods of resection of plane table survey. Explain 3 point problem, in detail. **(10 Marks)**

### PART – B

5 a. Differentiate the following :
i) Height of a point and level of a point
ii) Back sight and fore sight
iii) Permanent benchmark and temporary benchmark
iv) Height of instrument method and rise and fall method. **(10 Marks)**

b. Find the correction fro curvature and for refraction for a distance of
i) 1200 m ii) 2.48 KM. **(10 Marks)**

6 a. Explain with neat sketches, the characteristics of contours. **(10 Marks)**

b. Explain in detail, the uses of contour maps. **(10 Marks)**

7 a. Name the various parts of the transit vernier theodolite and explain the temporary adjustment of it. **(10 Marks)**

b. Explain with a neat tabular column the method of determination of vertical angles using theodolite. **(10 Marks)**

8 a. Name the various methods of traversing in surveying and explain any one method of traversing by fast needle. **(10 Marks)**

b. Name the various methods of balancing the traverse. Explain any one in detail. **(10 Marks)**

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