CBCS SCHEME

17MN45

Fourth Semester B.E. Degree Examination, Aug./Sept.2020
Mine Surveying – I

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1   a.   Define surveying. Distinguish between plane and geodetic survey and list the different types of chains used in surveying.   **(10 Marks)**
    b.   Explain the classification of surveying based on field, purpose instrument.   **(10 Marks)**

OR

2   a.   Define surveying. List the difference between prismatic and surveyor compass.   **(10 Marks)**
    b.   Write a short note on meridians, azimuths and bearing.   **(05 Marks)**
    c.   Explain Electronic Distance Measurements (EDM) instruments.   **(05 Marks)**

Module-2

3   a.   Define leveling. List the different types of levels.   **(05 Marks)**
    b.   Explain the transfer of levels from surface to underground.   **(05 Marks)**
    c.   The following consecutive readings were taken with a level and 5 meter leveling staff on. Continuously sloping ground at a common-internal of 20 meters :
         0.385; 1.030; 1.925; 2.825; 3.730; 4.685; 0.625; 2.005; 3.110; 4.485.
         The R.L of the first point was 208.125m. Rule out a page of a level field book and enter the above readings. Calculate the R.L of the points by rise and fall method and also the gradient of the line joining the first and last point.   **(10 Marks)**

OR

4   a.   With a neat sketch explain the fundamental axis and parts of dumpy level.   **(10 Marks)**
    b.   Explain the temporary adjustments of a level.   **(05 Marks)**
    c.   Explain the procedure to conduct height of the instrument method.   **(05 Marks)**

Module-3

5   a.   Define triangulation. Explain the various base line measurements and corrections.   **(10 Marks)**
    b.   Define a contour explain the characteristics and method of locating contour.   **(10 Marks)**

OR

6   a.   Define triangulation. Explain the various classification of triangulation.   **(10 Marks)**
    b.   Explain the interpretation methods and uses of contours.   **(10 Marks)**

Module-4

7   a.   With a neat sketch explain the construction and uses of planimeter.   **(10 Marks)**
    b.   Find out the volumes of earth work in a road cutting 120 meters long from the following data:
         The formation width 10 meters
         Side-slopes 1 to 1
         Average depth of cutting along the centre of line 5m
         Slopes of ground in cross-section 10 to 1.   **(10 Marks)**

OR

8 a. The areas within the contour line at the site of reservoir and the face of the proposed dam are as follows :

Contour	Area (m^2)
101	1000
102	12,800
103	95,200
104	1,47,600
105	8,72,500
106	1,350,000
107	19,85,000
108	22,86,000
109	25,12,000

Taking 101 as the bottom level of the reservoir and 109 as the top level, calculate the capacity of the reservoir.   (15 Marks)

   b. A series of offsets were taken from a chain line to a curved boundary line at intervals of 15meters in the following order :
0, 2.65, 3.80, 3.75, 4.65, 3.60, 4.95, 5.85m compute the area between the chain line, the curved boundary and the end offsets by Simpson's rule.   (05 Marks)

Module-5

9 a. Explain the temporary adjustment of an thexodalite.   (10 Marks)
   b. Explain traversing by fast needle method.   (10 Marks)

OR

10 a. Explain the measurement of horizontal angles by repetition method.   (10 Marks)
    b. Explain the methods of Balancing traverse.   (10 Marks)

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