N21-02679

TED (15/19) - 2011 Reg.No............................
(Revision-2015/19) Signature..........................

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/ COMMERCIAL PRACTICE - NOVEMBER-2021

SURVEYING - I

[Maximum marks: 75] (Time: 2.15 Hours)

PART – A

Marks

I. Answer any *three* questions in one or two sentences. Each question carries 2 marks

1. List the accessories used in plane table surveying.
2. Define the term magnetic declination.
3. List the different types of levelling staff.
4. Define contour interval
5. Write the equation for combined correction for curvature and refraction (3 x 2 = 6)

PART – B

II. Answer any ***four*** of the following questions. Each question carries 6 marks

1. With the help of a neat sketch illustrate indirect ranging.
2. Explain radiation method of plane table surveying
3. Differentiate prismatic compass from surveyor's compass
4. (a) Convert the following whole circle bearings into quadrantal bearings.

   1) 170°12' 2) 211°54' 3) 327°24'

   (b) Convert the following quadrantal bearings into whole circle bearings.

   1) S 31°36'E 2) S 68°6'W 3) N 5°42'W
5. Explain different types of bench marks.
6. List the uses of contour map.
7. Define sensitiveness of a bubble tube. Explain the factors effecting sensitiveness of a bubble tube. (4 x 6= 24)

PART – C

Answer ***any of the three units*** from the following. Each full question carries 15 marks

UNIT –I

III. (a) Describe different methods of chaining on a sloping ground. (7)

(b) Describe intersection and traversing methods of plane table surveying (8)

OR

IV. (a) A 20 m chain was found to be 10 cm too long after chaining a distance of 1500 m. It was found to be 18 cm too long at the end of day's work after chaining a total distance of 2900 m. Find the true distance if the chain was correct before the commencement of the work. (7)

(b) What is a cross staff? What are the different types are of cross staff? (8)

UNIT-II

V. (a) What is local attraction? How can it be detected? (7)

(b) The following bearings were observed while traversing with a compass. Mention which stations were affected by local attraction and determine the corrected bearings. (8)

Line	F.B	B.B
AB	45°45'	226°10"
BC	96°55'	277°5'
CD	29°45'	209°10'
DE	324°48'	144°48'

OR

VI. (a) Determine the values of included angles in the closed compass traverse ABCD conducted in the Clockwise direction, given the following fore bearings of their respective lines.

Line	F.B
AB	40°
BC	70°
CD	210°
DA	280°

Apply the check. (8)

(b) Write a note on different types of meridians (7)

UNIT-III

VII. (a) Explain temporary adjustments of a dumpy level (7)

(b) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings: 2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 1.044, 2.684 meters. Enter the above readings in a page of a level book and calculate the reduced level of points if the first reading was taken with a staff held on a bench mark of 432.384m. (8)

OR

VIII. (a) Define the different axes of a dumpy level. Give the relation between them. (7)

(b) The following consecutive readings were taken with a level and 3 m levelling staff on a continuously sloping ground at a common interval of 20 meters. 0.602, 1.234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824, 2.722. The reduced level of the first point was 192.122. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of the points and also the gradient of the line joining the first and the last points. (8)

UNIT-IV

IX. (a) Explain profile levelling and cross sectioning (8)

(b) Explain reciprocal levelling with the help of a neat sketch. (7)

OR

X (a) What are the characteristics of a contour line (7)

(b) Explain the indirect methods of contouring (8)
