

TED (15/19) 2011
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N22-04538

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**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE, NOVEMBER - 2022**

SURVEYING - I

[Maximum marks: 100]

(Time: 3 Hours)

PART – A

Maximum marks : 10

I (Answer *all* the questions in one or two sentences. Each question carries 2 marks)

1. List the classification of surveying based on instruments used.
2. Define the term levelling.
3. Write down the different types of chains used in surveying.
4. Define the term contour.
5. Differentiate between true bearing and magnetic bearing.

(5 x 2 = 10)

PART – B

Maximum marks : 30

II (Answer any *five* of the following questions. Each question carries 6 marks)

1. Briefly explain various factors involved in selecting survey stations.
2. Distinguish between height of collimation and rise and fall method of levelling.
3. Convert the following quadrantal bearing to whole circle bearings:
(a) N 12°24'E (b) S 31°36'E (c) S 68° 6' W (d) N 5° 42' W
4. Discuss various uses of contours.
5. Define the terms base line, check line and tie line.
6. The magnetic bearing of a line AB is 48°24'. Calculate the true bearing if the magnetic declination is 5°38' East.
7. Explain the temporary adjustments of levelling instrument.

(5 x 6= 30)

PART – C

Maximum marks : 60

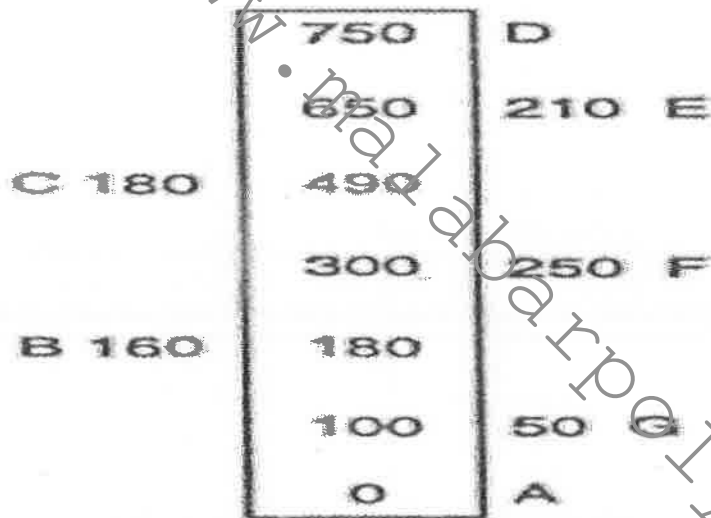
(Answer one full question from each unit.. Each full question carries 15 marks)

UNIT –I

- III. (a) Explain the methods of chaining on a sloping ground. (8)
 (b) With the help of neat sketch explain intersection method of plane table survey. (7)

OR

- IV.(a) Define the term Ranging and briefly explain different methods of ranging. (7)
 (b) Plot the following cross staff survey of a field ABCDEFG and calculate its area in square meters. (8)



UNIT-II

- V. (a) The following bearings were observed while traversing with a compass. Mention which station were affected by local attraction and determine the corrected bearings. (7)

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'

- (b) Define the term local attraction and briefly explain methods for its detection and correction. (8)

OR

- VI. (a) The following interior angles were measured with a sextant in a closed traverse. The bearing of the line AB was measured as $60^{\circ}00'$ with prismatic compass. Calculate the bearings of all other lines if $\angle A = 140^{\circ}10'$; $\angle B = 99^{\circ}8'$; $\angle C = 60^{\circ}22'$; $\angle D = 69^{\circ}20'$. (7)
- (b) Differentiate between Surveyor's compass and Prismatic compass. (8)

UNIT-III

- VII.(a) Define the term Bench mark and explain its types. (6)
- (b) Describe different types of levelling instruments. (9)

OR

- VIII.(a) The following staff readings were observed successively with a level, the instrument was shifted after 2nd, 4th and 8th readings. 0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 4.125, 0.120, 1.875, 2.030, 3.765. The first reading was taken with the staff held upon a benchmark of elevation 132.135m. Reduce the levels and find the difference in level between the first and last points using rise and fall method. (10)
- (b) Briefly explain the terms level surface and datum. (5)

UNIT-IV

- IX. (a) Briefly explain various characteristics of contour line. (8)
- (b) Explain profile levelling. (7)

OR

- X. (a) An observer standing on the deck of a ship just sees a light-house. The top of the light-house is 42 metres above the sea level and the height of the observer's eye is 6 metres above the sea level. Find the distance of the observer from the light-house. (7)
- (b) Explain any two methods of interpolation of contours. (8)
