C20-MNG–**305**

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BOARD DIPLOMA EXAMINATION, (C-20)
OCTOBER/NOVEMBER—2023

DMNG – THIRD SEMESTER EXAMINATION

MINE SURVEYING—I

Time : 3 hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define the terms *(a)* Geodetic survey and *(b)* Plane survey.

2. List any three reasons for incorrect length of chain.

3. List any three sources of errors in measuring distances.

4. Define the terms of the following :
(a) Tie line
(b) Offset

5. List any three factors governing the selection of station in chain surveying.

6. Define the following terms :
(a) Local attraction
(b) Magnetic declination

7. Convert the following whole circle bearings to reduced bearings.
(a) 127°20′20″
(b) 319°30′20″

8. Define the following terms :

(a) Line of collimation

(b) Reduced level

9. List any three types of levelling staves.

10. Define the following terms :

(a) Stratum contour

(b) Isopachyte

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PART—B   8×5=40

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Instructions :   (1) Answer *any* **five** questions.

                     (2) Each question carries **eight** marks.

                     (3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain the method of measuring distances on a sloping ground.

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(OR)

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(b) A 20 m chain was found to be 0·10 m too after chaining 1400 m. It was found to be 0·15 m too long after chaining 3600 m. If the chain was correct before commencement of the work, find the true distance.

12. *(a)* Describe the method of chaining when both vision and changing are obstructed.

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(OR)

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(b) Describe the method of chaining, when vision is free and changing is obstructed.

13. *(a)* Describe the surveyors compass with a sketch.

(OR)

(b) The following bearings were observed with a compass. Calculate the interior angles of the polygon and apply the check.

Line	Fore Bearing	Back Bearing
AB	60° 30′	240° 30′
BC	122° 00′	302° 00′
CD	46° 00′	226° 00′
DE	205° 00′	25° 30′
EA	300° 00′	120° 00′

14. *(a)* Explain the effects of curvature and refracting in levelling.

(OR)

(b) The following consecutive readings were taken with a level and a 4 meter levelling staff on continuously sloping ground at a common interval of 30 m. 0·585 on A, 0·936, 1·953, 2·846, 3·644, 3·938, 0·962, 1·035, 1·689, 2·534, 3·844, 0·956, 1·579, 3·016 on B. The elevation of A was 525·450. Make up a level book and apply the usual checks. Determine the gradient of the line AB.

15. *(a)* Describe the square method of contouring.

(OR)

(b) List the uses of contour for mining engineer.

Instructions : (1) Answer the following question.

(2) Each question carries **ten** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

16. Below are the bearings observed in clockwise traverse of a quadrilateral.

Line	Fore Bearing	Back Bearing
AB	124° 30′	304° 30′
BC	68° 15′	248° 00′
CD	310° 30′	132° 30′
DA	200° 15′	18° 30′

At what station do you suspect local attraction? Find the correct bearings of the lines and also determine the included angles. Apply usual checks.

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