C16–MNG–**406**

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BOARD DIPLOMA EXAMINATION, (C–16)
MARCH/APRIL—2018
DMNG—FOURTH SEMESTER EXAMINATION

MINE SURVEYING—II

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

PART—A　　　　3×10=30

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

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

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

1. Define the term 'rectangular coordinates' of a traverse.

2. Define the terms *(a)* 'simple curve' and *(b)* 'reverse curve'.

3. List the methods of setting out simple curves.

4. State the purpose of correlation.

5. Write a short note on Weisbach triangle.

6. List the merits and demerits of tacheometric survey.

7. Write a short note on anallatic lens.

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8. Define the terms *(a)* 'dip' and *(b)* 'true dip'.

9. List the modern surveying equipment used in surveying.

10. List the key components of GIS.

PART—B   10×5=50

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

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

(3) Drawing should be neat with necessary dimensions.

11. The following are the notes of a dial traverse carried out from *A* to *E* :

Line	Azimuth	Hor. Distance	Inclination
AB	210°	60 m	10° dipping
BC	110°	90 m	15° dipping
CD	60°	100 m	12° dipping
DE	130°	120 m	0° level

Calculate the azimuth, the length and inclination of the roadway to be driven from *E* to *A*.

12. The coordinates, in meters of five stations, *A*, *B*, *C*, *D* and *E* forming a polygon are as follows :

Station	Latitude (in m)	Departure (in m)
A	0	0
B	220 N	40 W
C	600 N	220 E
D	450 N	400 E
E	200 N	420 E

Calculate the area of the figure *ABCDE* to square meter.

13. Explain the method of setting out curve by chord and offset method on the surface.

14. Describe the methods of correlation by Weisbach triangle method.

15. To determine the multiplying constant of a tacheometer, the following observations were taken on a staff held vertical at distances measured from the instrument :

Observation	Horizontal Distance	Vertical Angles	Staff Intercept
1	50 m	3 °48	0·50 m
2	100 m	1 °06	1·00 m
3	150 m	0 °36	1·50 m

The focal length of object glass is 20 cm and the distance from the object glass to the Trunion Axis is 10 cm. Find the multiplying constant.

16. *(a)* State the interrelation between true dip, apparent dip and strike of a mineral bed. 5

(b) The full dip of a seam is 1 in 4 due South. Calculate the apparent dip in the direction of S 30 °E. 5

17. Three bore holes *A*, *B* and *C* supplied the following informations of a coal seam :

Line	Bearing	Gradient
AB	S 35 °E	1 in 6
BC	S 40 °E	1 in 4

Calculate the direction and gradient of the true dip of the coal seam.

18. Explain the principle of working of total station instrument used in modern surveying.

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