Code No: 182AP **R22**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech I Year II Semester Examinations, September - 2023
INTRODUCTION TO MINE SURVEYING
(Mining Engineering)

Time: 3 Hours **Max. Marks: 60**

Note: This question paper contains two parts A and B.
i) **Part- A** for 10 marks, ii) **Part - B** for 50 marks.
- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART- A

(10 Marks)

1.a)	What is the purpose of a field book?	[1]
b)	What is declination?	[1]
c)	What is a benchmark?	[1]
d)	What is reduced level?	[1]
e)	What is local attraction?	[1]
f)	What is reduced bearing?	[1]
g)	What is contour interval?	[1]
h)	What is reiteration method using theodolite?	[1]
i)	What is a closed traverse?	[1]
j)	What is the Bowditch method?	[1]

PART - B

(50 Marks)

2. What is an offset and what are its purposes? Explain, with suitable diagrams, different types of offsets. [10]

OR

3. Write short notes on:
a) Obstacles in chaining.
b) Cross-staff survey. [5+5]

4. Following consecutive readings were taken on points 1 to 7 along a line:
0.785, 1.326, 2.538, 3.435, 1.367, 2.328, 1.234, 1.657. The instrument was shifted after the fourth reading. The first reading was taken on a B.M. whose R.L. =100.00. Rule out a page of the level book and calculate the R.L. of all points by applying/using the collimation method/system. [10]

OR

5. The following table gives the perpendicular offsets taken from the centre line of a road to a hedge:

Offset No.	O_0	O_1	O_2	O_3	O_4	O_5	O_6	O_7	O_8
Offset in m	4	6	5	7	5	4	3	4	6
Distance in m	0	15	30	45	60	80	100	110	120

Compute the area between the centre-line of the road and hedge by applying a) the Trapezoidal rule b) the Simpson rule. [10]

6. Explain the methods to eliminate local attraction in a closed traverse using a compass/a dial. [10]

OR

7. Correct the following bearings taken in a compass/dial survey of a closed traverse ABCDE by including the angle method.

Line	**Observed bearings**	
	F.B.	**B.B.**
AB	83^0	260^0
BC	141^0	320^0
CD	170^0	350^0
DE	240^0	58^0
EA	328^0	153^0

[10]

8. Explain with suitable diagrams, the procedure to carry out temporary adjustments of a theodolite. State the precautions to be taken. [10]

OR

9. Explain the procedure for the location of contours by indirect methods with suitable diagrams. [10]

10. Explain the procedure to measure "base line" in a triangulation survey with suitable figure (s). [10]

OR

11. The following data for a closed traverse PQRS. Calculate the length and bearing of line SP using latitude and departure of lines. [10]

Line	**Bearing**	**Length**
PQ	N $83^0$36' E	85m
QR	N $42^0$15' E	137m
RS	N $63^0$48' E	67m

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