Total No. of Questions :5] *[Total No. of Printed Pages :4*

Roll No .....

MI - 304

B.E. III Semester

Examination, June 2015

Mining Surveying - I

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

UNIT - I

1. a) Distinguish between direct and indirect ranging.

b) Describe any one method of indirect ranging on slopping ground.

c) What are the obstacles in chaining?

d) A 30m chain was found to be 20 cm too short after chaining a distance of 2000 m. It was found to be 30 cm too short at the end of day's work after chaining a total distance of 3000 m. Find the true distance if the chain was correct before the commencement of the work.

OR

The following offsets were taken from a chain-line to a hedge :

Distance (cm)	0	6	12	18	24	36	48	60	72	81	90
Offsets (cm)	3.8	3.3	2.4	1.8	0.9	1.5	1.8	2.2	3.0	3.3	3.6

Calculate the area enclosed between the chain line, the hedge and end-offsets by Simpson's rules.

UNIT - II

2. a) Define the term magnetic declination.

b) Explain the difference between W.C.B. system and Q.B. system of bearing.

c) The following bearings were observed with a prismatic compass. Find the interior angles of a compass traverse. AB = 60°30', BC = 122°-00', CD = 46°-00', DE = 206°-03' and EA = 301°-00'

d) The following magnetic bearings were observed in running a closed traverse :

Line	AB	BC	CD	DA
F.B.	124°30'	68°15'	310°30'	200°15'
B.B.	304°30'	246°00'	135°15'	17°15'

At what station do you suspect the local attraction? Determine the correct true bearing. If declination was 5°10'E. Also calculate the included angles.

OR

Following bearings were observed while traversing with a compass.

Line	F.B.	B.B.
AB	46°50'	227°30'
BC	100°50'	281°10'
CD	30°45'	210°15'
DE	288°45'	108°45'

Find out which stations were locally attracted and determine the corrected bearings.

UNIT - III

3. a) Write down the principles of plane tabling.
   b) Write down the advantages of plan table surveying.
   c) Describe resection method of plane tabling.
   d) What do you meant by two point problem in plane tabling? Explain in details.

OR

Explain with neat sketches, the Accessories used in plane table surveying.

UNIT - IV

4. a) Explain dial surveying.
   b) Explain fast needle surveying.
   c) Difference between Fast and needle surveying.
   d) Enumerate various types of errors in dial surveying.

OR

What are the sources of errors in Dial Surveying? Explain in detail.

UNIT - V

5. a) Define the term reciprocal levelling.
   b) What is Auto level?
   c) What is temporary adjustment of dumpy level? How is it done?
   d) The following consecutive readings were taken with a dumpy level and 4 meter levelling staff on a continuously sloping ground at common interval of 30 m. 0.855 (on A), 2.335, 3.825, 0.425, 2.015, 3.265, 0.580, 1.845, 3.845 (on B).

The R.L. of A was 380.500m. Make entries in a level book and apply the usual checks. Determine the gradient of line joining point A and B.

OR

In fly levelling from a B.M. of R.L. 140.605, the following reading were observed.

Back sight - 1.545, 2.695, 1.415, 2.925

Fore sight - 0.575, 1.235, 0.595.

From the last position of the instrument, six pegs at 20 m intervals are to be set out on a uniformly rising gradient of 1 in 50, the first peg is to have an R.L. of 144.000. Find the staff readings and R.L. of the pegs.

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