

# CBCS Scheme

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15MN53

## Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018 Mine Surveying - II

Time: 3 hrs.

Max. Marks: 80

**Note: Answer any FIVE full questions, choosing one full question from each module.**

### Module-1

- 1 The following observations were made using a tacheometer fitted with an anallactic lens, the multiplying constant being 100.

Inst station	Height of Inst	Staff station	WCB	Vertical angle	Hair readings	Remarks
P	1.550	A	30°30'	4°30'	1.155, 1.755, 2.355	R.L of P = 150.00
		B	75°30'	10°15'	1.250, 2.000, 2.750	

Calculate the distance AB and the R.L of A and B. Find the gradient of line AB also.

(16 Marks)

OR

- 2 Drive the expression for horizontal and vertical distance in the fixed – hair method when the staff is held vertically and the measured angle is that of elevation. (16 Marks)

### Module-2

- 3 Explain, with suitable diagram how a simple circular curve is set out by Rankine's deflection angle method using one theodolite. Give suitable table. (16 Marks)

OR

- 4 a. Describe how you would set a circular curve by the method of offsets from the long chord with the help of chain and tape. (10 Marks)  
b. Derive a relation between the radius and degree of a curve. (06 Marks)

### Module-3

- 5 Define the term correlation survey. How correlation survey is classified? Explain the precautions to be taken while carrying out correlation survey in a shaft. (16 Marks)

OR

- 6 Explain in detail, with suitable diagrams, the procedure for carrying out correlation survey by weisbach triangle method. (16 Marks)

### Module-4

- 7 What is stope surveying? Explain in detail, with suitable diagrams, how the stope survey is done by Ray method? What are the precautions to be observed during such stope surveying? (16 Marks)

OR

- 8 a. What are the statutory duties of a surveyor in mines? Explain them. (08 Marks)  
b. What are the different mine plans and sections to be maintained in an underground coal mine? Explain in detail, various contents/features to be shown on an underground plan of a coal mine. (08 Marks)

**Module-5**

- 9 a. Explain, with a suitable diagram, how an elevation of a point is determined by photographic measurement. (10 Marks)
- b. What is over lapping? Explain in detail, why the over lapping is required in axial photogrammetry? (06 Marks)

**OR**

- 10 Write short notes on :
- a. Application of remote sensing in mining (08 Marks)
- b. Photo theodolite. (08 Marks)

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