32

CBCS SCHEME

USN | | | | | | | | | |

17MN53

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Mine Surveying - II

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Determine the gradient from a point 'P' to a point 'Q' from the following observations carried out with a tachometer fitted with an anallatic lens.

Inst. Station	Staff point	Bearing	Vertical angle	Staff readings
O	P	345^0	$+15^0$	0.75, 1.435, 2.120
	Q	75^0	$+10^0$	0.625, 1.835, 3.050

Assume that the staff is held vertically and that the multiplying constant of the instrument is 100. **(10 Marks)**

b. Explain the principle of Stadia and determine the Instrument constant. **(10 Marks)**

OR

2 a. Following observation refer to a tachometric traverse conducted with a tachometer fitted with an analectic lens.

Inst. station	Staff point	Readings			H.I	V.A
P	Q	0.660	1.750	2.840	1.6	0^0
Q	P	0.715	1.810	2.905	1.54	0^0
Q	R	1.845	2.520	3.195	1.56	$+13^0\ 30'$

If R.L of station P is 587.75m determine
i) lengths PQ and QR ii) R.L. of Q & R.L of R.
Assume staff is held vertically and K = 100. **(10 Marks)**

b. Derive the equations for horizontal distance and vertical distance for inclined sight with staff vertical. **(10 Marks)**

Module-2

3 a. Calculate the elements of a simple circular curve from the following data and estimate the degree of curve. Radius of curve = 300m ; Angle of Intersection = 110^0 ;
Chainage of P.I = 835.56m. **(10 Marks)**

b. Explain the method to set out an curve using Deflection Angle Method. **(10 Marks)**

OR

4 a. Two tangents intersect at chainage 1265m with angle of Intersection as 140^0. If the radius of curve is 300m, calculate the necessary data for setting out the curve by offsets from the chord produced. Peg interval is 20m. **(10 Marks)**

b. Explain two Theodolite method and Tacheometric method of set out a curve. **(10 Marks)**

Module-3

5 a. In a Weisbach triangle, the Azimuth of a Plumb – plane marked by two wires A & B is 115^0 23' 49" and C is a theodolite station an the south side of the eastern prolongation of AB. Given the following data , calculate the Azimuth of the line CD. Illustrate the your answer by a sketch AB = 3.481m ; BC = 2.674m ; CA = 6.155m
$A\hat{C}D = 179^0\ 14'\ 33''$; $B\hat{C}C = 179^0\ 10'\ 17''$. **(10 Marks)**

b. Describe a method of connecting the surface base line to underground when one shaft and a Incling is available. **(10 Marks)**

OR

6 a. The following are the details of observations made in connection with correlation by Weisbach triangle method. A & B are the two plumb lines suspended from the pit top of the pit. D & E are the stations in the underground traverse. Survey which is required to be connected with the surface survey. Bearing of AB as found from the surface is 40^0 40' 00" and the length of AB = 2.286m , BC = 2.621m , AC = 4.907m , CD = 18.348m , DE = 30.480m , $B\hat{C}D = 181^0\ 0'\ 0''$, $C\hat{D}E = 96^0$ and Weisbach angle $A\hat{C}B = 0^0\ 1'\ 40''$. Find the bearing of underground drift DE. **(10 Marks)**

b. Describe briefly the method of connecting surface base line to underground when two shafts are available. **(10 Marks)**

Module-4

7 a. Explain the method of Stope surveying open stopes considering any dip of the ore body. **(10 Marks)**

b. Explain the method setting out gradients in tunnels and aditi. **(10 Marks)**

OR

8 a. Explain the method of Stope surveying for narrow ore bodies which is not steeply dipping. **(10 Marks)**

b. List the roles and responsibilities of Mine surveyor. **(10 Marks)**

Module-5

9 a. How to determine Elevation of a point by Photographic measurement? **(10 Marks)**

b. Explain the process of Interaction of EM radiation, with earth's surface. **(10 Marks)**

OR

10 a. List the applications of remote sensing. **(10 Marks)**

b. How to determine Horizontal and Vertical angles from terrestrial photograph. **(10 Marks)**

* * * * *