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SUBJECT CODE NO: E-304
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(CIVIL) (CGPA) Examination Nov/Dec 2017

Surveying-I
(REVISED)

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

- N.B
- i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
 - ii) Attempt any two questions from the remaining questions in each section.
 - iii) Assume suitable data if necessary.
 - iv) Figures to the right indicate full marks.

Section - A

Q.1 Solve any five

10

- 1) Define surveying
- 2) What are the basic units of angular Measurements?
- 3) Define Representative fraction
- 4) What are the conventional symbols
 - (a) Main Stations
 - (b) River
 - (c) North line
 - (d) Temple
- 5) Define chain surveying
- 6) Define (a) Bearing (b) Meridian.
- 7) Differentiate between W.C.B & Q.B.
- 8) What are the Fundamental axis of a transit theodolite.
- 9) Define consecutive Co – ordinates
- 10) Define orientation

Q.2 (A) What are the classification of Surveying? Explain in detail.

07

(B) A line was measured by a 20M chain which was accurate before starting the day's work After chaining 900M the chain was found to be 6CM too long After chaining a total distance of 1575M. the chain was found to be 14CM too long find the true distance of the line.

08

2017

Q.3 (A) What are the sources of Errors in Compass Surveying? Explain. 07

(B) AB, AC, AD, AE are $35^\circ 30'$, $125^\circ 15'$, $225^\circ 30'$, $330^\circ 45'$ respectively find the included Angles with the neat sketch. 08

Q.4 (A) Explain field Procedure for Measurement of Repetition Method with the help neat sketch. 07

(B) Calculate latitude departure & closing Error for the given traverse & adjust by using Bowditch's Rule. 08

Line	Length (M)	W. C. B.
PQ	89.31	$45^\circ 10'$
QR	219.76	$72^\circ 05'$
RS	151.18	$161^\circ 52'$
ST	159.10	$228^\circ 43'$
TP	232.26	$300^\circ 42'$

Q.5 (A) What are the temporary adjustments of plane table Surveying? Explain Briefly. 07

(B) Explain field Procedure of Plotting Few Points by radiation Method with neat sketch. 08

Section – B

Q.6 Solve any Five. 10

- 1) Define Levelling
- 2) Define G. T. 5 bench Mark.
- 3) What is back Sight reading
- 4) Define Simple levelling
- 5) Define Contour interval
- 6) Define horizontal equivalent.
- 7) Give the formula for Refraction of Correction
- 8) Define (I) B.M (II) MSL
- 9) Give the Area of formula by Mid ordinate rule
- 10) Define Tachometer.

Q.7 (A) Explain a DUMPY level with neat sketch. 07

(B) The following staff readings observe successively with a level the instrument having been Moved after third sixth & eighth 2.228, 1.606, 0.988, 2.090, 2.864, 1.262, 0.602, 1.982, 2.044, 2.684 metres. Enter the above readings in a Page of Level book & Calculate R.L of points in the first was taken with staff held on a B.M of R.L 432.384M Calculate R.L's using H.I.methods & also usual checks. 08

Q.8 (A) What are the characteristics of contour lines? 07

(B) Two Point A & B are 1530 M a part across a wide river the following reciprocal levels are taken with one level. 08

Level at	Readings on	
	A	B
A	2.165	3.810
B	0.910	2.355

The error in the collimation adjustments of the level is -0.004M in 100M. Calculate the True difference of level between A&B & the refraction.

Q.9 (A) Define Planimeter? Explain with neat Sketch of Planimeter? 07

(B) A railway Embankment is 400M, long is 12M wide at the Formation Level & has the side slope 2:1 the ground levels at every 100mt along the Centre line are as under. 08

Distance	0	100	200	300	400
R.L	204.800	206.200	207.500	207.200	208.300

The formation level at 'O' chainage is 207.000 & Embankment has a rising gradient 1:100 the ground is level across the centre line. Calculate the Volume of Earth work.

Q.10(A) Explain the Procedure of Field measurement of Determination of tacheometric Constants with a neat Sketch. 07

(B) Instrument was set-up at station 'O' Following observation where Make angle of Elevation $Q_1 = 10^\circ 20' 20''$ $S_1 = 1.005$ $S_2 = 1.350$ $S_3 = 1.705$ angle of depression $Q_2 = 6^\circ 50' 20''$ $S_1 = 0.560$ $S_2 = 0.750$ $S_3 = 0.940$ R.L of B.M. = 100.000 Find distance between AB & R.L Of 'B' take $K=100$ $C=0.4$. 08