Scheme – G

Sample Question Paper

Course Name : Civil Engineering Group

Course Code : CE/CR/CS/CV

Semester : Third **17310**

Subject Title : Surveying

Marks : 100 **Time: 3 Hrs**

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

Q1. (a)Attempt any SIX of the following: **12 Marks**

a) Define Survey.

b) List the Principle of survey.

c) List the types of B.M.

d) Define True Bearing and Magnetic bearing.

e) State the Function of reflecting mirror in prismatic compass.

f) State the Principle of Plane table surveying.

g) List different instruments for linear measurement.

h) Define fore sight and back sight.

(b) Attempt Any TWO of the following: **08 Marks**

a) Classify the survey based on Nature of Field and state their objectives.

b) Draw a well labeled Diagram of 30m metric chain and state the function of Swivel joint, oval rings.

c) Draw Conventional Symbol for i) Embankment ii) Cultivated Land iii) Forest iv) River

Q2. Attempt any FOUR of the following: **16 Marks**

a) State the use of Chain / tape, ranging rod, Peg, Arrows in chaining process.

b) Describe stepping method of chaining on Sloping Ground.

c) Define Base line, Tie line and state their significance in chain Triangulation.

d) State the Procedure of setting Offsets with open cross staff.

e) Distance between two stations when measured with 20m. chain was 1423m. It was afterward found that the chain was 10cm too long. Calculate true distance between two stations.

f) Describe the construction of Optical Square with neat sketch.

Q3. Attempt any FOUR of the following: 16 Marks

a) Suggest the method to overcome an obstacle in chaining, where vision and chaining both are obstructed.

b) Draw well labeled diagram of Prismatic compass. .

c) Write B.B for followings bearings

a) 125° 15’ b) N30° E c) 360° d) S45° 45’W

d) Compare WCB system and R.B. system on four points.

e) State the procedure of correcting closed traverse by Graphical adjustment. (Bowditch Rule)

f) State any four instrumental errors and four personnel errors in prismatic compass survey.

Q4. Attempt any FOUR of the following: 16 Marks

a) Convert following bearings from W.C.B to R.B.

i) 210^0 ii) 45^0 15’ iii) 135^0 45’ iv) 315^0 15’

b) List four Accessories of plane table and state their uses.

c) State four Advantages of Telescopic alidade over plane alidade.

d) State four Merits and four Demerits of plane Table survey.

e) Describe Intersection method of plane table survey..

f) State the types of bench marks and state situation where each B.M.is applicable.

Q5. Attempt any FOUR of the following: 16 Marks

a) State the Fundamental lines of Dumpy Level and give their relationship.

b) Describe the method of Temporary Adjustment of Dumpy level.

c) State four personal and four instrumental errors in leveling.

d) Describe the method of Profile leveling.

e) Compare Rise and Fall method With Height of plain of Collimation method on any four points..

f) Fill up the missing readings and apply usual checks in level book page.

Point	B.S	I.S	F.S	Rise	Fall	R.L.	Remark
1	3.125					*	B.M
2	*		*	1.325		125.005	C.P
3		2.320			0.055	*	
4		*		*		125.350	
5	*		2.655		*	*	C.P
6	1.620		3.205		2.165	*	C.P
7		3.625			*	*	
8			*	*		122.590	T.B.M

Q6. Attempt any TWO of the following: 16 Marks

a) Draw and Calculate a Area of a plot from given following data

Chainage of line AB is 90m,

The offsets taken on chain line are as follow

Chainage-	0	15	40	70	80
Offset(left)-	5(C)	0 (D)	10 (E)	15 (F)	8(G)
Chainage-	15	25	60	85	
Offset(right)-	- 0(D)	15 (H)	12 (I)	10(J)	

Where C,D,E,FG,H,I&J are offset points.

b) Calculate the reduce level by Rise and Fall method on a continuous sloping ground with four meter leveling staff at common interval of 30m.
0.855(onA),1.545,2.335,3.115,3.825,0.455,1.380,2.055,2.855,3.455,0.585,1.015, 1.850, 2.755,3.845 (on B);The reduced level of A was 380.500. Make the entries in a level book and apply usual checks. Determine the gradient of AB.

c) Detect the Local attraction at stations and correct the bearings of lines of a traverse ABCDEA. Also calculate included angles.

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Line	F.B	B.B
AB	59°00’	239°00’
BC	139°30’	317°00’
CD	215°15’	36°30’
DE	208°00’	29°00’
EA	318°30’	138°45’