Sample Question Paper – I

9022

Course Name   :- Civil Engineering
Course code   :- CE/CR/CS/CV
Semester   :- Third
Subject   :- Surveying
Duration   :- 3 hours   Marks: 80

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) Use of non-programmable calculator is permissible.

6) Preferably, write the answers in sequential order.

Marks

Q.1 Attempt any Eight   **16**

a) State any two uses of surveying.

b) State two principles of surveying.

c) Draw conventional symbols for – (I) Road in banking (ii) Barren land.

d) Define (I) True meridian (ii) Magnetic meridian

e) Define (I) Whole circle bearing (ii) Quadrantal bearing.

f) State the meaning of local attraction in compass survey.

g) State four types of bench marks.

h) Define (I) Level surface (ii) Reduced level

i) Define (I) Contour interval (ii) Horizontal equivalent

j) List any four components of polar planimeter.

Q.2 Attempt any three   12

a) Differentiate between plain surveying and geodetic surveying on any four points.

b) Write the procedure for setting out a perpendicular on a chain line with an open cross staff.

c) Write the process of direct ranging with a neat sketch.

d) Prepare a page of a field book showing a chain line with following details.

1) Length of chain line = 45 m

2) A telephone post 10 m perpendicular from chainage 5m at right side.

3) The corners of the building are 9m and 9.8m from chainage 12.5m and 23m respectively to the left of chain line.

Q.3 Attempt any three   12

a) The distance between two points measured with 30m chain was recorded as 1423m. It was afterwards found that the chain was 5 cm too short what was the true distance between those two points ?

b) (i) Convert following WCB to reduced bearing.

1) 72^0 2) 215^0 30'

(ii) Convert following reduced bearing to WCB

1) N 42^0 W   2) S 81^0 30' E

c) Draw a neat-labeled sketch of a section of a prismatic compass showing different components.

d) The following are the bearings observed in a closed compass traverse. Correct them for local attraction.

Line	Fore Bearing	Back Bearing
AB	66^0 15'	244^0 00'
BC	129^0 45'	313^0 00
CD	218^0 30'	37^0 30'
DA	306^0 45'	126^0 45'

Q.4 Attempt any Four   16

a) The fore bearings of the lines PQ,QR,RS and ST are 55^0 30', 130^0 15', 215^0 30', and 310^0 45' respectively. Find the included angles P.Q.R.

b) Write the procedure of graphical method for adjustment of closing error of a closed traverse.

c) Define the terms :- (I) Line of sight (ii) Line of collimation (iii) Bubble tube axis (iv) height of instrument.

d) Write the temporary adjustments of a dumpy level.

e) Enumerate the process of fly leveling with a neat sketch.

f) Following consecutive readings were taken with dumpy level. The first reading was taken at BM of R.L. 108.000. The instrument was shifted after fifth reading. 2.150, 3.150, 2.245, 1.125, 0.830, 3.125, 0.760, 1.835. Prepare a level book page, enter above readings and find reduced levels of all points. Apply arithmetic checks.

Q.5 Attempt any three   12

a) Following is the page of a level field book where some readings are missing (?). Fill the missing readings and apply arithmetic check.

Station	BS	IS	FS	HI	RL	Remark
A	?			500.585	500.000	BM
		0.935			?	
		?			499.355	
		2.845			?	
		?			498.650	
B			?		497.225	Last Point

b) State any two distinguishing features each of tilting level and auto level compared to dumpy level.

c) State any four instrumental errors in leveling work.

d) State any four characteristics of contour lines.

Q.6 Attempt any three   12

a) Enumerate the stepwise procedure of interpolation of contours by arithmetic method with a suitable example.

b) State four uses of contour map.

c) Following readings were taken by planimeter with the anchor point outside the figure. IR=7.312, FR=2.336, M=100 sq.cm. C=21.42. Calculate the area of the figure when it is observed that zero mark of the dial cross the index mark once in anticlockwise direction.

d) State the procedure for computing the volume by trapezoidal formula.

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