Examination Nov/Dec 2019

H-391

Total No. of Printed Pages:03

SUBJECT CODE NO:- H-391
FACULTY OF SCIENCE AND TECHNOLOGY
S.E. (Civil) (Sem-I)
Surveying-I
[OLD]

[Time: Three Hours]   [Max. Marks:80]

Please check whether you have got the right question paper.

N.B.: 1) Q. No. 1 and Q. No. 6 are compulsory.

2) Solve any two questions from the remaining questions for each Section.

3) Assume suitable data if necessary.

4) Figures to the right indicate full marks.

Section A

Q.1   Attempt any five:-   10

1) What is the objective of Surveying?

2) What are the uses of surveying?

3) Explain the primary classificatin of surveying.

4) Enlist the accessories used in chain surveying.

5) What is a whole circle bearing and Quadrantal bearing?

6) What is the angular check of the closed traverse?

7) What are the sources of errors in compass surveying?

8) Enlist the methods of contouring.

9) List out the accessories used in Plane table survey.

10) Explain G.T.S bench marks.

Q.2   a) Explain the theory and working principle of an optical square.   07

b) Explain the sources of errors in chaining.   08

Q.3   a) Explain the field procedure for compass traversing.   07

b) The following bearings were observed in running a compass traverse   08

Line	Fore bearing	Back bearing
AB	45°15'	225°15'
BC	125°15'	303°15'
CD	181°	1°
DA	289°30'	109°30'

Calculate the included angles of the traverse.

Q.4   a) The following consecutive readings were taken with a level and 4m staff on a   08
continuously sloping ground.
0.780, 1.535, 1.955, 2.430, 2.985, 3.480,1.115, 1.960,2.365,3.640,0.935,1.045,1.630
and 2.545. The R.L of 1st point was 500.00m. Rule out a page of level field book and
enter the above readings. Calculate the reduced levels of all the points by height of
instrument method.

b) Explain:- 1) Curvature and refraction   2) Back sight and foresight   07

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| Q.5 | a) | Explain the advantages & disadvantages of Plane Table survey. | 08 |
| | b) | Explain the process of locating a point by method of intersection. | 07 |

Section B

Q.6	Attempt any five:	10
	1) What do you mean by a transit theodolite?
	2) What are deflection angles?
	3) State the trapezoidal rule.
	4) What are temporary adjustments?
	5) What is meant by 'zero circle'?
	6) Explain: Latitude and departure.
	7) Name the parts of a telescope.
	8) What do understand by virtue of change in face of a theodolite?
	9) What is lead and lift?
	10) What are tacheometric constants?

Q.7 a) A tacheometer was set up at a station C and the following readings were obtained on a 08
staff held vertically.

Inst st^n	Staff station	vertical angle	Hair reading			Remark
			Lower	Middle	Upper	
c	B.M	$-5°40'$	1.35	2.100	2.560	R. Lol
c	D	$+8°$	0.820	1.555	2.310	BM=150.00m

b) Explain the theory of anallatic lens. 07

Q.8 a) Derive an expression with the help of a neat sketch. An area of a level section. 07

b) An embankment of width 12 m and side slopes of 1 ½ : 1 is required to be made on a 08
ground which is level in a direction transverse to the centre line. The central heights at
30 cm intervals are as follows:
1.00 , 1.30, 2.35, 2.70, 1.60, 1.40 and 0.900.
Calculate the volume of earthwork according to
1) The trapezoidal formula
2) Prismoidal formula

Q.9 a) Explain the procedure for measurement of magnetic bearing using a theodolite. 07
b) Explain the Gales Traverse table. 08

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Q.10   a) The record of a closed traverse is given below, with two distances missing.   08

Line	Length (m)	Bearing
AB	105	30°30′
BC	?	135°
CD	79	220°30′
DE	55	240°
EA	?	319°45′

Calculate the length of BC and EA.

b) Explain the Beamans Stadia arc.

07