

Enrollment No

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*Kadi Sarva Vishwavidyalaya*

*L.D.R.P. Institute of Technology & Research, Gandhinagar*

### B. E. Semester –III

Date/Day : 30/08/14 , Saturday

**Branch : Civil Engineering**

Subject Name & Code : *Surveying* (CV-306)

Time : 10:30 am to 12:00 am

**Max. Marks : 30**

**Instructions:** (1) All questions are compulsory

(2) Figures to the right indicate full marks.

(3) Indicate clearly, the options you attempt along with its respective question number.

**Q-1 (A)** Define following terms for the Vernier transit theodolite: (05)

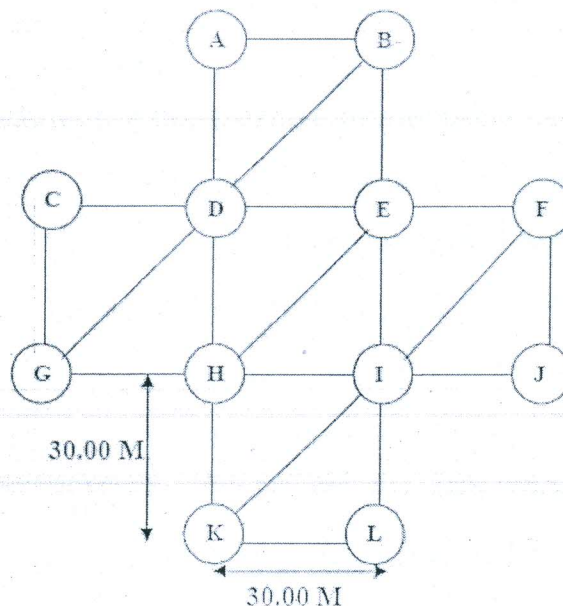
(1) Plunging                      (2) Swinging                      (3) Face right observation

(4) Line of collimation      (5) Latitude.

(B) Determine the volume of earth required to be excavated for the plot of 30.0 (05)

m X 30.0 m. on land shown in Fig The formation level is 90.0 m. Reduced level of existing ground level at junction in Fig is as per table

<b>Junction</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Existing GL RL m	94.5	93.2	92.8	91.2	90.5	92.3
<b>Junction</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>
Existing GL RL m	94.0	94.0	93.2	98.8	98.9	96.0



Q-2 (A) Discuss Repetition method of horizontal angle measurement using Theodolite. What are the advantages of this method? (05)

(B) In a closed traverse, the lengths of the lines DE and EA could not be measured due to an obstruction. Determine the lengths from the following data. (05)

Line	Length(m)	Bearing
AB	380	$97^{\circ} 00'$
BC	525	$32^{\circ} 05'$
CD	370	$307^{\circ} 20'$
DE	(?)	$235^{\circ} 00'$
EA	(?)	$151^{\circ} 20'$

OR

Q-2 (A) Enlist different methods of theodolite traversing and describe Deflection angle method (05)

(B) Two tangents intersect at a chainage of 1200 m the deflection angle being  $24^{\circ}$ . Calculate the following quantities for setting out curve of radius 350 m (05)

(1) Tangent length (2) Length of long chord (3) Apex distance

(4) Length of curve (5) Chainage of point of commencement and tangency

Q-3 (A) Explain Rankine's method of tangential angle for setting out simple circular curve (05)

(B) Enlist the General methods of Calculating area. Explain double meridian distance (DMD) method in detail. (05)

OR

Q-3 (A) Explain the procedure of Traversing Method of plane table surveying. (05)

(B) A road embankment is 12.0m wide. The stations are 50 m apart 250 m in length at the formation level, with a side slope of 2:1. The embankment has a rising gradient of 1 in 100m. The ground levels at every 50m along the centre line are as follows Take formation level of zero chainage is 102.0m calculate the volume of earth work by trapezoidal rule & Prismoidal rule. (05)

Distance (m)	0	50	100	150	200	250
Ground R.L.(m)	101	101.20	101.80	102.00	103.70	104.20

\*\*\*\*\* All the Best \*\*\*\*\*