Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026

Third Semester

Civil Engineering

CE3351 – Surveying and Levelling

(Common to Agricultural Engineering)

Regulations - 2021

Duration : 3 Hrs *Maximum : 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q.No	*Questions*	*BTL*	*CO*	*Marks*
1.	What is local attraction? What are the sources of local attractions?	L1	1	2
2.	Difference between Engineer's chain and revenue chain.	L2	1	2
3.	State the uses of contour.	L2	2	2
4.	Define: (a) Fore bearing (b) Back bearing	L1	2	2
5.	Outline the use of sextant.	L2	3	2
6.	Classify the errors caused due to manipulation and sighting in tachometric surveying.	L2	3	2
7.	Define principle of least square.	L1	4	2
8.	What is meant by control surveying?	L1	4	2
9.	What is EDM?	L1	5	2
10.	List out the errors in Total station.	L1	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

Q.No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	On a closed compass traverse survey PQRST, following are the observations made with a suspicion of local attraction in there.	L3	1	16

Line	FB	BB
PQ	147°	326°45'
QR	74°30'	253°00'
RS	41°30'	222°45'
ST	312°15'	132°45'
TP	219°15'	39°15'

Find the station affected with local attraction, included angles and the corrected bearings.

Or

	b	Develop the various types of plane table Surveying with neat sketches.	L3	1	16
12.	a	The following consecutive readings were taken at 20m intervals along a chain line. The readings were 2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.935, 0.435, 1.630, 2.255 and 3.360m. The instrument being Shifted after fourth and eighth readings. R.L of B.M is 100.500. Find the R.L by Rise and Fall method.	L3	2	16
		Or			
	b	Build in detail about the different methods of Levelling.	L3	2	16

13. a A tachometer was setup at a station C and the following reading were obtained on a staff vertically held K = 100 and C = 0.15. L3 3 16

Inst. Station	Staff Station	Vertical Angle	Hair Readings (m)	Remarks
O	BM	-5° 20'	1.150, 1.800, 2.450	R.L of B.M 750.500 m
	P	+8° 12'	0.750, 1500, 2.250	

Calculate the horizontal distance O to P and RL of P.

Or

b Elaborate in detail about temporary and permanent adjustments of the Theodolite. L3 3 16

14. a The following are mean values observed in the measurement of three angles α, β and γ at one station: γ L4 4 16
α = 76° 42' 46.2" weight 4
α + β = 134° 36' 32.6" weight 3
β + γ = 185° 35' 24.8" weight 2
α + β + γ = 262° 18' 10.4" weight 1
Calculate the most probable value of each angle.

Or

b Examine in detail about the method of Triangulation systems with neat sketch. L4 4 16

15. a Enumerate the measuring principles and working principle of Total station with neat sketch. L2 5 16

Or

b What is GPS? Explain in detail the segments of GPS with their applications. L2 5 16