



GENERAL INSTRUCTIONS TO THE CANDIDATES

- Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level (K₁ to K₆)
- Candidates are strictly instructed not to write anything in the question paper other than their roll number.
- Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.
- Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.
- Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

B.E DEGREE EXAMINATIONS: DEC 2015

(Regulation 2014)

Third Semester

CIVIL ENGINEERING

U14CET302: Surveying

Time: Three Hours

Maximum Marks: 100

**Answer all the Questions:-
PART A (10 x 1 = 10 Marks)**

1. Matching the following

CO1 [K₃]

List I	List II
A.Theodolite	i. Reduced level above the line of collimation
B.Orientation	ii.Used to measure base line
C.Gunter chain	iii. To measure vertical and Horizontal angle
D.Inverted levelling	iv.To keep the table in parallel position at all station

A B C D

- a) i iii iv iv
b) ii iv iii iii

- 3) Temporary adjustment of level
 a) 2,3,4,1
 c) 1,4,2,3
- 4) Fixing up of level over tripod
 b) 3,2,4,1
 d) 4,1,3,2

10. The curve having two different radiuses? CO5 [K₃]
 a) Simple curve
 b) Compound curve
 c) Transition curve
 d) Double curve

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11. Define positive declination. CO2 [K₁]
12. Distinguish between prismatic and surveyor compass. CO2 [K₃]
13. Mention four characteristics of contour. CO4 [K₂]
14. Calculate the difference in level between two point A & B CO2 [K₄]
 Reading on A (Floor) - 0.535m
 Reading on B (Sunshade) 1.200m
 R.L of B.M is 100m
15. What are the function of theodolite? CO2 [K₂]
16. How is the closing error in a traverse balanced? CO3 [K₄]
17. Define the term stadia intercept. CO3 [K₁]
18. Differentiate fixed hair tachometer from substance bar tachometer. CO4 [K₄]
19. Calculate degree of curve for the given radius R =12m. CO5 [K₄]
20. Evaluvate the formula for long chord in curve. CO5 [K₅]

Answer any FIVE Questions:-
PART C (5 x 14 = 70 Marks)
(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. The following is the page of a level field book from which several values are missing. Reconstruct the page and fill all the entries marked with a cross. Apply all necessary checks CO2 [K₅]

Station	BS	IS	FS	Rise	Fall	RL	Remarks
1	1.385					100.00	B.M
2		1.430			x	X	

3		x			0.395	X	
4	x		1.275	x		X	Cp1
5	0.630		0.585	0.310		X	Cp2
6		0.920			x	100.13	
7		x			0.210	X	
8			1.740		x	X	

22. The bearing observed at the station of a closed traverse are given below. Check whether the bearings are correct. If not, correct the bearings by the method of included angles CO2 [K₆]

AB : 122° 15' BA : 302° 15'
 BC : 66° 00' CB : 243° 45'
 CD : 308° 15' DC : 133° 00'
 DA : 198° 00' AD : 15 30'

23. What is 'closing error in traverse'? Describe with a sketch how such a error is adjusted? CO2 [K₅]

24. (i) What are the characteristics of contour line? (8) CO4 [K₃]

- (ii) Describe interpolation of contours. (6) CO4 [K₂]

25. The following readings were taken on a vertical staff with a stadia tachometer fitted with an analectic lens and having a multiplying constant of 100 CO3 [K₅]

Staff station	Bearing	Stadia reading	Vertical angle
P	47° 19'	0.940 1.500 2.000	+8° 00'
Q	22° 10'	0.847 2.000 3.153	-5° 00'

26. (i) List out the types of curve? Explain with sketch (10) CO5 [K₂]

- (ii) What are the purposes of curves (4) CO5 [K₂]
