

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR (AUTONOMOUS)

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OUESTION BANK (DESCRIPTIVE)

Subject with Code: SURVEYING (23CE0105)

Course & Branch: B.Tech & CE

Year & Sem: II Year & I Sem

Regulation: R23

UNIT –I INTRODUCTION AND BASIC CONCEPTS, LINEAR DISTANCES, PRISMATIC COMPASS

1	а	Define survey	[L1][C01]	[2M]						
	b	List any four a	[L1][CO1]	[2M]						
	с	Make a note o	n non-me	tric chain.			[L1][C01]	[2M]		
	d	Mention the va		[L1][C01]	[2M]					
	e	Differentiate b	[L2][CO1]	[2M]						
2	a	Briefly explain	n about th	e primary divisions of	surveying.		[L2][CO1]	[5M]		
	b	Mention the o	bjectives	of surveying.			[L1][C01]	[5M]		
3	Exp	olain in detail the	e classific	ations of surveying.			[L2][CO1]	[10M]		
4	a	Briefly explain	the princ	ciples of surveying?			[L2][CO1]	[5M]		
	b	Make a note or	n Plane T	able Surveying with th	eir advantages.		[L1][C01]	[5M]		
5	a	Briefly explain	the vario	ous approximate metho	ods in linear measurem	nent.	[L2][CO1]	[5M]		
	b	A steel tape wa	as exactly	30 m long at 20°C w	hen supported through	out its length	[L3][CO1]	[5M]		
		under a pull of	f 98N. A	line was measured w	with this tape under a	pull of 147N				
		and at a mean	n tempera	ture of 32°C and fou	and to be 780 m long	g. The cross-				
		sectional area	of the tap	$e = 0.03 \text{ cm}^2$, and its	total weight = 6.8 N. H	For steel, $\propto =$				
		11 X 10 ⁻⁶ per °	C and E f	for steel = 20.58×10^6	N/cm^2 . Compute the	true length of				
		the line if the t	ape was s	upported during meas	urement at every 30 m	1.				
6	Wh	at are the different	ent tape c	orrection and how the	y are applied?		[L1][C01]	[10M]		
7	а	List out the va	in any two in	[L2][CO1]	[6M]					
		detail.								
	b	With sketch, ex	xplain the	indirect method of rai	nging.		[L2][CO1]	[4M]		
8	Wit	h neat sketch, e	xplain the	e prismatic compass by	v indicating their parts	•	[L2][CO1]	[10M]		
9	a	Write short not	tes on dip	and declination.			[L1][C01]	[6M]		
	b	Define bearing	& mentio	on the types of bearing	.		[L1][CO1]	[4M]		
10	а	Convert the W	CB into F	RB.			[L3][CO1]	[4M]		
		i) 331°30'	ii) 297	^{2°} 00' iii) 127°30	iv) 23°00'					
	b	What is local	attraction	and briefly explain	the various methods	of correcting	[L2][CO1]	[6M]		
		local attraction								
11	The	e following bear	ings were	e observed in running	a closed traverse. At	what stations	[L4][CO1]	[10M]		
	do	you suspect loc	al attracti	on? Find the correct b	bearings of lines and a	also compute				
	the	le included angles.								
			LINE	FORE BEARING	BACKBEARING					
			AB	71°05'	250°20'					
			BC	110°20'	292°35'					
			CD	161°40'	341°40'					
			DE	220°50'	40°05'					
			EA	300°50'	121°10'					





R23

1	a Define Levelling.										[L1][CO2]	[2M]	
	b Differentiate between backsight and foresight.									[L2][CO2]	[2M]		
	c Define contour gradient.										[L1][CO2]	[2M]	
	d Make a note on Simpson's one third rule.									[L1][CO2]	[2M]		
	e List out the various methods of calculating the volume.									[L1][CO2]	[2M]		
2	a Mention the various types of levels and explain briefly tilting level.									[L1][CO2]	[5M]		
	b Write short notes on methods of leveling.										[L1][CO2]	[5M]	
3	Discuss the effects of curvature and refraction in leveling.											[L2][CO2]	[10M]
4	The following staff readings were observed successively with level, the instrument										[L4][CO2]	[10M]	
	has been move	ed forv	vard a	after the	e secon	d, fourt	h and e	eighth ro	eadings	: 0.875	, 1.235,		
	2.310, 1.385,	2.930,	3.125	5, 4.125	5, 0.120	, 1.875	, 2.030	and 3.2	765. Th	e first	reading		
	was taken wit	h the s	staff l	neld up	on a be	enchmai	rk of e	levation	132.13	85m. Ei	nter the		
	readings in lev	vel boo	k-forı	n and r	educe t	he level	ls. App	ly the u	sual che	ecks. Fi	nd also		
	the difference	in level	l betw	veen the	e first ar	nd the la	ıst poin	ts.					
5	a Briefly exp	olain ab	out th	ne level	ing staf	f.						[L2][CO2]	[5M]
	b Mention th	e uses	of cor	ntour in	civil er	ngineeri	ng wor	ks?				[L1][CO2]	[5M]
6	Define contour	r. State	the v	arious	characte	eristics of	of conto	our lines				[L1][CO2]	[10M]
7	What are the in	ndirect	meth	ods of l	ocating	a conto	our? Wi	ite abou	ıt any tv	vo metł	nods.	[L1][CO2]	[10M]
8	The following	perpen	dicul	ar offse	ets were	taken a	t 10m	intervals	s from a	ı survey	line to	[L4][CO2]	[10M]
	an irregular bo	oundary	y line	: 3.25,	5.60, 4	.20, 6.6	5, 8.75	, 6.20, 1	3.25, 4.	20 and	5.65m.		
	Calculate the area enclosed between the survey line, the irregular boundary line and										ine and		
	the first and the last offsets, by the application of (i) Average ordinate rule, (ii)										ule, (ii)		
	Trapezoidal rule, and (iii) Simpson's rule.												
9	The following	perpen	dicul	ar offse	ts were	taken a	t 10m i	ntervals	from a	survey	line to	[L4][CO2]	[10M]
	a hedge:												
	Chainage (m)	0	15	30	45	60	70	80	100	120	140		
	Offsets (m)	7.6	8.5	10.7	12.8	10.6	9.5	8.3	7.9	6.4	4.4		
	Calculate the	area b	etwee	en the	survey	line, th	he hedg	ge and	the end	offset	by (a)		
	Trapezoidal ru	le(b)S	Simps	on's ru	le.								
10	a List out the	e variou	is met	thods o	f detern	nining tl	he areas	s of give	en surfa	ce.		[L1][CO2]	[4M]
	b Discuss in	detail a	bout	the vol	ume by	cross se	ection r	nethod.				[L2][CO2]	[6M]
11	The areas with	in the o	conto	ur line a	at the si	te of res	servoir	and the	face of	the proj	posed	[L4][CO2]	[10M]
	dam area as fo	llows:							_				
	Contou	ContourArea (m²)ContourArea (m²)											
	101 1000)		106			135000				
	102		1280)		107		198500)			
	103	103 9520 108 228600											
	104			1476	0		109			251200)		
	105			8725	0								
	Taking 101 as	the bot	tom 1	evel of	the rese	ervoir ai	nd 100	as the t_{0}	op level	, Calcul	ate the		
	capacity of the reservoir.												



UNIT –III THEODOLITE SURVEYING, TRAVERSING

1	a	a Define centering.								[2M]
	b	Differentiate between face left and face right observation.								[2M]
	с	What is dep	What is departure and latitude?							
	d	Mention the formula to find the distance between the two points when the base is								[2M]
		inaccessible								
	e	Define omit	[L1][CO3]	[2M]						
2	a	Make a note	[L1][CO3]	[4M]						
	b	How do you measure horizontal angle between two points with the help of a								[6M]
		theodolite b								
3	W	ith neat sketch	, write about	the parts	of a transi	t theodol	ite.		[L1][CO3]	[10M]
4	a	Write the ter	mporary adju	stments o	of a theodo	lite			[L1][CO3]	[5M]
	b	How do you	i measure the	horizont	al angles l	between	various p	oints by reiteration	[L1][CO3]	[5M]
		method?								
5	De	etermine the R	L of the top	of a temp	le from the	e followi	ng data. S	Station A and B are	[L3][CO3]	[10M]
	in	line with the to	op of the tem	ple.	1					
		Inst Station	Reading on	BM(m)	Vertical	Angle	I	R.L of BM		
		А	1.085	5	10°48′		R.L of	BM = 150.000m		
		В	1.265	5	7°12´		AB=50 m			
6	De	erive an expres	sion to find t	he height	of an obje	ect by do	uble plan	e method.	[L3][CO3]	[10M]
7	Μ	ention the var	rious method	s used for	or the mea	asuremer	t of ang	les in a theodolite	[L2][CO4]	[5M]
	tra	werse. Briefly	explain the m	nethods o	f included	angles.	_			
8	a	Write short	notes on metl	nods of a	djusting th	e travers	е.		[L1][CO4]	[5M]
	b	Briefly expl	ain the Bowd	itch's me	thod of ad	justing tl	ne travers	se.	[L2][CO4]	[5M]
9	Th	ne following ar	e the latitude	s and dep	artures of	closed tr	averse A	BCD. Calculate the	[L3][CO4]	[10M]
	are	ea by independ	lent coordinat	te method	1.					
			LINE	LATIT	UDE]	DEPAR	ГURE			
			AB	204.	6	113	.9			
			BC	-234	.9	205.	.8			
				-130	0	-80.	0 7			
10	a	Make a note	on closing er	TOT.	0	233	• /		[L2][CO4]	[5M]
	b	List out the y	various cases	of omitte	d measure	ment.			[L1][CO4]	[5M]
11	Th	The table below gives the lengths and begins of the lines of a traverse ADODE the								[10M]
11	ler	noth and beari	ng of EA ha	ving heer	omitted	Calculat	e the len	oth and bearing of		
	the	e line EA								
			Line	Le	ngth (m)	Bea	ring			
			AB		204	87	°30'			
			BC		226	20	°20'			
			CD		187	280)°00'			
			DE		192	210)°3'0			
			EA		?		?			



1	a	a How a curve is designated? [L1][CO5] [2									
	b	Defi	[L1][CO5]	[2M]							
	c	Mak	[L1][CO5]	[2M]							
	d	List	[L1][CO5]	[2M]							
	e	Writ	[L1][CO5]	[2M]							
2	a	Writ	[L1][CO5]	[5M]							
	b	Drav	[L2][CO5]	[5M]							
3	Ex	plain (he various elen	nents of a simple	curve with a neat	sketch.		[L2][CO5]	[10M]		
4	Me	ention	the various me	thods of setting of	out of simple cur	ve. Briefly	explain the fie	ld [L2][CO5]	[10M]		
	pro	cedur	e of setting out	of curve by two t	heodolite method	l.		0			
5	Tw	o tan	gents intersect	at chainage 12	50 m. The ang	le of inter	section is 150	00 . [L2][CO5]	[10M]		
	Cal	lculate	e all data neces	sary for setting o	ut a curve of rad	ius 250 m	by the deflection	on			
	ang	gle me	ethod. The peg	intervals may be	e taken as 20 m.	Prepare a	setting out tab	le			
	wh	en the	least count of	the vernier is 20".	Calculate the da	ta for field	checking.		54.03.53		
6	A	compo	ound curve is m	hade up of two ar 105°	cs of radii 380 m	and 520 n c	a. The deflection	$\sum_{n=0}^{\infty} [L2][C05]$	[10M]		
	ang	gle of	the combined of	curve is 105° and	that of the first	arc of radi	us 380 m 1s 58	5°.			
	int.	e chai	nage of the firs	n tangent point is	848.55 III. FIND	une chainag	e of the point	01			
7	9 1110	Wha	$\frac{1}{1}$ is tacheom	etry? What are	the different	systems	of tacheometr		[5M]		
/	а	mea	surements?	etry: what are	the unrerent	systems (Ji tacheometi				
	h	Dete	rmine the value	es of stadia consta	unts from the follo	wing obser	vations	[1.3][CO5]	[5M]		
	U	Dette				Stadia	readings				
			Instrument	Staff reading	Distances (m)	Lower	Unnor				
			Station	UII		Lower	Opper				
				А	150	1.250	2.750				
			0	В	200	1.000	3.000				
				С	250	0.750	3.250				
8	а	a Explain with sketch the principle of EDM instrument. [L2][CO5] [5									
	b	Men	tion about the a	dvantages of tota	l station.			[L1][CO5]	[5M]		
9	Bri	efly e	xplain the types	s of EDM instrum	ient.			[L2][CO5]	[10M]		
10	De	scribe	with sketch, th	ne fundamental m	neasurement of an	ngles and d	istances by tot	al [L2][CO5]	[10M]		
	sta	tion.									
11	a	Writ	e short notes or	n Global Positiona	al System.			[L1][CO5]	[4M]		
	b	bBrief explain about Drone survey and LiDAR survey.[L2][CO5]									



UNIT –V PHOTOGRAMMETRY SURVEYING

	a	Define focal length	[L1][C06]	[2M]
	h	What do you mean by nadir point?	[L1][CO6]	[2][1]
1	c	Make a note on Isocentre	[L1][CO6]	[2M]
1	4	Montion the various types of shotogrammetry		
	a	Mention the various types of photogrammetry.		
	e	Define photographic mapping.	[L1][CO6]	[2M]
2	a	Write short notes on basic concepts of photogrammetric surveying.	[L1][CO6]	[5M]
2	b	Discuss about the perspective geometry of aerial photograph.	[L2][CO6]	[5M]
3	Br	ief explain with sketch the relief and tilt displacements.	[L2][CO6]	[10M]
4	Ill	ustrate about terrestrial photogrammetry in detail.	[L2][CO6]	[10M]
_	а	Make a note on flight planning in photogrammetric surveying.	[L1][CO6]	[5M]
5	b	Discuss briefly about ground control extension for photographic mapping.	[L2][CO6]	[5M]
6	Ex	xplain in detail about stereoscopy in photogrammetric surveying.	[L2][CO6]	[10M]
7	Br	iefly explain the various applications of photogrammetric surveying.	[L2][CO6]	[10M]
0	W	hat is aerial triangulation? Mention how aerial triangulation works with their	[L1][CO6]	[10M]
8	ap	plications.		
9	Ex	xplain in detail about radial triangulation.	[L2][CO6]	[10M]
	a	Make a note on mapping using paper prints.	[L1][CO6]	[5M]
10	b	Brief about mapping using stereo-plotting instruments with their types and	[L2][CO6]	[5M]
		applications.		
11	a	Define mosaic with their types.	[L1][CO6]	[5M]
11	b	Write short notes on map substitutes.	[L1][CO6]	[5M]

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