Rea.No.

B.E. (Full Time) DEGREE END SEMESTER EXAMINATIONS, MAY 2012

CIVIL ENGINEERING BRANCH

THIRD SEMESTER

CE 9203 - SURVEYING I

(REGULATIONS 2008)

Time: 3 Hours

INSTRUCTIONS:

- 1. Answer ALL questions under Part-A and B respectively
- 2. Assume suitable data wherever necessary
- 3. Draw neat sketches wherever desirable

$PART - A (10 \times 2 = 20 Marks)$

Maximum Marks: 100

- 1. Distinguish between Plane and Geodetic Surveying.
- 2. The length of AB measured with a 20 Metre chain was found to be 841.5 m. Calculate the true length of the line if (i) the chain was 10 cm long and (ii) the chain was 10 cm short.
- 3. The magnetic bearing of a line AB is S 38° 30' W. Calculate the true bearing if the magnetic declination is (i) 4° 30' W and (ii) 3° 30' E.
- 4. Mention the demerits of plane table surveying over the other methods of surveying.
- 5. Bring out the temporary adjustments of a Tilting level.
- 6. What considerations would you have while selecting the contour interval?
- 7. Write about the Micro-optic Theodolite.
- 8. Mention the rule in which the closing error is adjusted in Theodolite Traversing.
- 9. State the importance of setting out works.
- 10. What are the precautions to be undertaken in tunnel surveys

PART - B (5x16 = 80Marks)

11.a.i.The following bearings were observed in case of a closed traverse. At what stations, local attraction is suspected? Also compute the correct bearings.

LINE	Fore Bearing	Back Bearing	<u> </u>
AB	'S 40°30' W	N 41°15' E	
BC	S 80°45' W	N 79°30' E	
CD	N 19°30' E	S 20°00' W	
DA	S 80°00' E	N 80°00' W	(8)
ii. What is three point prol	olem? How is it solved by	/ Bessel's method?	(8)

P.T.O.

12.a.i. Wh ii. Des	at is Surv scribe the	eying? N different	lention il method	s basions of rar	c principles nging. (OR)				(6) (10)
12.b.i. Wh	at is well	condition	ed triang	gle? W	hy is it requ	uired?			(4)
ii.Brii	ng out the	step by	step pro	cedure	s involved	in chain f	raversing	g while	(10)
pre	panng un	s plan of	a bunum	ıy.					(12)
13.a. The the i 0.58 0.63 Ente redu with	following nstrumen 5, 1.010, 5 and 1.6 r the aboriced levels a staff he	staff read t was shi 1.735, 3. 05metres ve readin s of point Id on a B	dings we fted after 295, 3.7 s gs in a p s by rise ench Ma	re obs r fifth a 75, 0.3 page of and fa ark of 1	erved succ ind eleventi 50, 1.300, f a level fiel all method i 36.440m.	essively h reading 1.795, 2. d book a f the first	with a lev is. 575, 3.3 nd calcu reading	vel, 75, 3.89 late the was take	5, 1.735, en (16)
10 h la a				• • •					
13.b. ln a a st	proposed	Hydro-e	lectric pr m ³ betw	oject, a	a storage re e lowest dra	eservoir \ awdown(was requ	ired to p	rovide water
13.b. In a a st level	proposed orage of 4 I(TWL).Th	Hydro-e 5million e area c	lectric pr m³betw ontained	oject, a een the within	a storage re e lowest dra the stated	eservoir v awdown(contours	was requ LDD) an	ired to p d the top stream fa	rovide water ice of
13.b. In a a st leve the c	proposed orage of 4 (TWL).Th dam were	Hydro-e I.5million e area c as follow	lectric pr m ³ betw ontained /s.	oject, a een the within	a storage re e lowest dra the stated	eservoir v awdown(contours	was requ LDD) an and ups	ired to p d the top stream fa	rovide water ice of
13.b. In a a st level the c Co	proposed orage of 4 (TWL).Th dam were ntour(m)	Hydro-e 5million e area c as follow 100	lectric pr m ³ betw ontained vs. 95	oject, a een the within 90	a storage re e lowest dra the stated	eservoir v awdown(contours	was requ LDD) an and ups	ired to p d the top tream fa	rovide water ice of 65
13.b. In a a st level the c Co	proposed orage of 4 I(TWL).Th dam were ntour(m)	Hydro-e 5million e area co as follow 100	lectric pr m ³ betwo ontained ys. 95	oject, a een the within 90	a storage re e lowest dra the stated 85	eservoir v awdown(contours 80	was requ LDD) and and ups 75	ired to p d the top tream fa 70	rovide water ice of 65
13.b. In a a st level the c Co Are If LD	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) D was to	Hydro-e 5million e area c as follow 100 30 be 68cm	lectric pr m ³ betwo ontained /s. 95 25 . calcula	oject, a een the within 90 23 te the	a storage re e lowest dra the stated 85 17 TWL for	eservoir v awdown(contours 80 15	was requ LDD) an and ups 75 13	ired to p d the top stream fa 70 7	rovide water ace of 65 2
13.b. In a a st level the c Co Are If LD (i) Fu	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) D was to ull storage	Hydro-e 5 million e area co as follow 100 30 be 68cm capacity	lectric pr m ³ betwo ontained /s. 95 25 , calcula	roject, a een the within 90 23 ite the	a storage re e lowest dra the stated 85 17 TWL for	eservoir v awdown(contours 80 15	was requ LDD) and and ups 75 13	ired to p d the top tream fa 70 7	rovide water lice of 65 2
13.b. In a a st level the c Co Are If LD (i) Fu (ii) 6	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) D was to ull storage 0%full sto	Hydro-e 5million e area co as follow 100 30 be 68cm capacity rage cap	lectric pr m ³ betwo ontained /s. 95 25 , calcula /, acity.	oject, a een the within 90 23 te the	a storage re e lowest dra the stated 85 17 TWL for	eservoir v awdown(contours 80 15	was requ LDD) an and ups 75 13	ired to p d the top stream fa 70 7	rovide water ice of 65 2
13.b. In a a st level the c Co Are If LD (i) Ft (ii) 6 (Use	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) 2D was to ull storage 0%full sto end area	Hydro-e 5 million e area co as follow 100 30 be 68cm capacity rage cap method	lectric pr m ³ betwo ontained /s. 95 25 , calcula /, acity. for calcu	oject, a een the within 90 23 te the ulating	a storage re e lowest dra the stated 85 17 TWL for volumes)	eservoir v awdown(contours 80 15	was requ LDD) an and ups 75 13	ired to p d the top stream fa 70 7	rovide water ace of 65 2 2 (16)
13.b. In a a st level the c Co Are If LD (i) Ft (ii) 6 (Use 14.a. To d were	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) D was to all storage 0%full sto end area etermine taken.	Hydro-e 5million e area c as follow 100 30 be 68cm capacity rage cap method the eleva	lectric pr m ³ betwo ontained /s. 95 25 , calcula /, acity. for calcu	oject, a een the within 90 23 te the ulating	a storage re e lowest dra the stated 85 17 TVL for volumes) of a flag po	eservoir v awdown(contours 80 15 st, the fo	was requ LDD) and and ups 75 13	ired to p d the top stream fa 70 7 7	rovide water ace of 65 2 (16) ons
13.b. In a a st level the c Co Are (i) Fu (ii) 6 (Use 14.a. To d were	proposed orage of 4 ((TWL). Th dam were ntour(m) ea (ha) D was to ull storage 0%full sto e end area etermine taken. Instrum	Hydro-e 5 million e area co as follow 100 30 be 68cm capacity rage cap method the eleva	lectric pr m ³ betwo ontained ys. 95 25 , calcula y, acity. for calcu	oject, a een the within 90 23 te the ulating ne top	a storage re e lowest dra the stated 85 17 TWL for volumes) of a flag po Angle of	eservoir v awdown(contours 80 15 st, the fo	was requ LDD) and and ups 75 13	ired to p d the top tream fa 70 7 7	rovide water ace of 2 (16) ons
13.b. In a a st level the c Co Are If LD (i) Fu (ii) 6 (Use 14.a. To d were	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) D was to all storage 0%full sto end area etermine taken. Instrum station	Hydro-e 5million e area co as follow 100 30 be 68cm capacity rage cap method the eleva ent R	lectric pr m ³ betwo ontained /s. 95 25 , calcula /, acity. for calcu tion of the eading of each Ma	oject, a een the within 90 23 ite the ulating ne top on ark	a storage re e lowest dra the stated 85 17 TWL for volumes) of a flag po Angle of elevation	eservoir v awdown(contours 80 15 st, the fo	vas requ LDD) and and ups 75 13 Ilowing c narks	ired to p d the top tream fa 70 7 7	rovide water ice of 65 2 (16) ons
13.b. In a a st level the c Co Are If LD (i) Ft (ii) 6 (Use 14.a. To d were	proposed orage of 4 (TWL).Th dam were ntour(m) ea (ha) D was to ull storage 0%full sto end area etermine taken. Instrum station A B	Hydro-e 5million e area c as follow 100 30 be 68cm capacity rage cap method the eleva ent R	lectric pr m ³ betwo ontained /s. 95 25 , calcula /, acity. for calcu tion of the eading of eench Ma 1.265m 1.085m	oject, a een the within 90 23 te the ulating ne top	a storage re e lowest dra the stated 85 17 TVL for volumes) of a flag po Angle of elevation 10°48' 07°12'	eservoir v awdown(contours 80 15 st, the fo Rer Rec of P	was requ LDD) and and ups 75 13 Ilowing c narks luced Le	ired to p d the top stream fa 70 7 7 vel 000m	rovide water ace of 2 (16) ons

Find the elevation of the top of a distance between A and B is 50m. (16) ay p (OR)

14.b.i. Explain the Gale's traverse table used for computing the co-ordinates in theodolite traversing.

ii. In a closed traverse ABCDE, the bearing of the line AB was measured as 150° 30'. The included angles were measured with Theodolite as under LA = 130° 00'; LB = 90° 00'; LC = 125° 30'; LD = 135° 30'; LE = 59° 00' Calculate the bearing of all other lines and also check it. (10)

(6)

15. a. Tabulate the data needed to set out a circular curve of radius 500m to connect two straights having a deflection angle of 18° 24'. The chainage of intersection of tangents is 465m. Adopt peg interval of 20m. Use the method of deflection distances with offsets from chords produced. (16)

(OR)

15.b. Tabulate the data needed to set out a 5° left handed curve to connect two straights meeting with a deflection angle of 17° 30' at a point of chainage 1200m. (16)Adopt peg interval of 15m.