B.E. (Full Time) DEGREE END SEMESTER EXAMINATIONS, April/May 2013

CIVIL ENGINEERING

THIRD SEMESTER (REGULATION 2008)

CE9203 SURVEYING I

Time: 3 hr Max. Mark: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. Write the advantages of diagonal scale over plain scale.
2. A line was measured by a 20 m chain which was 0.2 m too long and was found to be 10 chains. Find the correct length.
3. Differentiate Prismatic Compass and Surveyor's Compass
4. What are the temporary adjustments of a plane Table?
5. Define Isogonic and Agonic line
6. How will you identify the terrain from contour map?
7. Why both verniers are read in theodolite?
8. What do you understand by the closing error in a closed traverse?
9. How will you compute the length of the curve, tangent length and mid ordinate distance of a simple curve with radius R and deflection angleΔ?
10. List the uses of Shafts.

Part – B (5 x 16 = 80 Marks)

11. Discuss how would you determine the difference in elevations of the instrument station and the top of a chimney, if the base of the chimney is (a) accessible (b) inaccessible (16 marks)
12. a) A Steel tape is 30 m long between end graduations at a temperature of 27°C under a pull of 45N when lying on the flat. The tape is stretched over two supports between which it records 30,000m, and is supported at two intermediate supports equally spaced. All the supports are at the same level, and the tape is allowed to sag freely, between the supports. If the temperature in the field is 32°C and the pull on the tape is 75 N, calculate the actual length between the end graduations and equivalent length at mean sea level if the measurement was made at an elevation of 1000 m.

Area of cross section of the tape	=	7.0 mm^2
Mass of the tape	=	1.60 kg
Coefficient of expansion	=	1.1X 10^{-5} per °C
Young's modulus	=	2X10^5 N/mm^2
Radius of the earth	=	63670 km.

(16 marks)

(OR)

12. b) (i) Explain the various points which you will keep in mind while recording entries in a chain survey field book.

(6 marks)

(ii) Discuss several methods of dropping a perpendicular from a point on the chain line. Also explain the different methods of erecting a perpendicular at a point on the chain line.

(10 marks)

13. a) Given below are the bearings of the lines of a closed traverse. Adjust the bearings for local attraction.

Line	FB	BB
AB	68°	247°
BC	55°	231°
CD	120°	304°
DE	180°	360°
EF	263°	87°
FG	311°	127°
GH	244°	66°
HA	301°	120°

(16marks)

(OR)

13 b) What is two point-problem? Describe the procedure in detail. (16 marks)

14 a) Following is the page of a level field book. Some of the readings got erased and are missing. Missing readings have been marked by cross marks. Calculate the missing readings.

Station	B.S.	I.S.	F.S.	Rise	Fall	R.L
1	X				0.825	150.00
2		2.455				X
3		2.400				X
4	2.695		X			148.070
5	X		2.050		X	148.715
6		2.500				149.780
7		2.900				149.340
8		X			0.125	X
9			2.670			149.610

(16 marks)

(OR)

14. b) What is contouring? Describe the methods of Contouring. (16marks)

15. a) (i) Discuss various methods of horizontal control when setting out a huge building. (8 marks)

(ii) Explain in detail, the procedure for setting out foundation of a building. (8 marks)

(OR)

15. b) Two tangents intersect at chainage 59+60, the deflection angle being 50°30'.Calculate the necessary data for setting out a curve of 15 chains radius to connect the two tangents if it is intended to set out the curve by offset from chords. Take peg interval equals to 100 links, length of the chain being equal to 20 metres (16 marks)