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B.E./B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, MAY 2013

Agriculture and Irrigation Engineering

THIRD SEMESTER - (Regulation 2008)

AI 9201 SURVEYING

Time : 3 Hours

Answer ALL questions

Maximum Marks: 100

PART A – (10 X 2 = 20 marks)

1. Define Surveying.
2. What is reciprocal ranging?
3. Draw a neat sketch of Surveyor' Compass.
4. Write the advantages of method intersection in Plane Table Surveying.
5. List various types of leveling used in surveying.
6. Derive the equation used to correct the effect curvature.
7. Write the uses of theodolite.
8. With a neat sketch, describe the working principle of GPS.
9. What is a reverse curve?
10. List the applications of engineering surveying in Agriculture and Irrigation engineering.

PART B – (5 X 16 = 80 marks)

- 11(a) (i) Describe the surveying equipments used for linear measurements. 8
- (ii) Discuss various methods used for setting perpendiculars to survey line with neat sketches. 8
- 12(a) Describe various accessories used in Plane Table surveying with a neat sketch and their role in mapping. 16

(OR)

- (b) (i) What is Local Attraction? Write various precautions to be taken to avoid local attraction. 6

- (ii) Calculate corrected bearing of following observations made in a closed traverse. 10

Line	Fore Bearing	Back Bearing
PQ	261° 45'	80° 00'
QR	232° 30'	53° 15'
RS	30° 15'	209° 15'
ST	189° 30'	10° 00'
TP	70° 30'	249° 30'

- 13(a) Discuss various surveying methods used for generation of contours with their relative advantages and disadvantages. 16

(OR)

- (b) (i) A closed traverse ABCDEA is run by using total station and the following coordinates of the points were obtained. Calculate the area of the polygon using coordinate method. 8

Point	X (m)	Y (m)
A	0.0	591.8
B	517.4	202.9
C	523.4	0
D	716.3	694.0
E	125.7	591.8

- (ii) Write typical characteristics of Contours. 8

- 14(a) Explain various temporary and permanent adjustments of vernier transit theodolite. 16

(OR)

- (b) (i) Discuss the functioning of Total Station. Write the latest developments in total station instruments. 8

- (ii) Determine the height of inaccessible point (H) with theodolite observations from two instrument stations which are not in the same vertical plane. 8

- 15(a) Discuss various surveys used for planning and execution of engineering projects like a highway. 16

(OR)

- (b) (i) Two tangents intersect at the chainage 1190m, the deflection angle being 36°. Calculate all the data necessary for setting out a curve with a radius of 200 by deflection angle method. The peg interval is 20m. 8

- (ii) What is a transition curve? Write functions and requirements of transition curve. 8