END SEMESTER EXAMINATION, NOV/DEC 2011
B.E/B.Tech (Full Time) Agricultural and Irrigation Engineering (III sem)
AI 9201- SURVEYING (Regulation 2008)

Time : 3 hrs   Max. Marks=100

Part A :Answer all the questions briefly   (10 x 2 marks=20 marks)

1.What is the purpose of doing cadastral survey?

2.What is reciprocal ranging?

3.Distinguish between datum and bench mark.

4.What are the natural errors occur in leveling?

5.What is local attraction and how do you detect it?

6.What are the different sources of errors in plane tabling and how do you eliminate them?

7.Distinguish between closed traverse and open traverse

8.What is grade contour?

9.What is the need for doing reconnaissance survey?

10.List various methods of setting out a simple circular curve.

Part B   (5 x 16 marks=80 marks)

(Note: Make neat sketches where necessary)

11.The length and bearings of a closed traverse ABCD, as observed with a transit theodolite are given below.
    Prepare a Gale's traverse table and plot the traverse.(16 marks)

Line	Length (m)	Included angle	W.C.B
AB	200	A=93° 10′	120° 40′
BC	650	B=75° 10′	
CD	120	C=122° 20′	
DA	600	D=68°	

12(a) (i)What are the corrections applied in chain surveying? (8 marks)
      (ii)Calculate the sag correction for a 20m long steel tape under a pull of 100N in 2 equal strands of
      10m each. Wt of 1 cu. cm of steel = 0.078N. Area of cross section of the tape is .07 sq.cm (8 marks)

(OR)

12(b)(i)What is R.F?   (2 marks)
      (ii)Discuss briefly the different scales used for various types of surveying.   (6 marks)
      (iii)What do you mean by working from whole to part and what is the advantage in it? (8 marks)

13(a) The following bearings were taken in running a compass traverse. (16 marks)

Line	F.B	B.B
AB	124° 30′	304° 30′
BC	68° 15′	246° 00′
CD	310° 30′	135° 15′
DA	200° 15′	17° 45′

At what stations do you suspect local attraction? Find the correct bearings of the lines and also compute the included angle.

(OR)

13(b) Explain with neat sketches the following methods of locating a point by plane table survey. Also discuss the merits of the following methods. (16 marks)

14 (a) (i) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings:
2.228; 1.606; 0.988; 2.090; 2.864; 1.262; 0.602; 1.982; 1.022; 2.684 meters.
Calculate the R.L of points if the first reading was taken with a staff held on a bench mark of 432.00 m. (8 marks)
(ii) What are the different sources of error in leveling and how are they eliminated? (8 marks)

(OR)

14 (b) (i)The railway embankment is 10m wide with side sloes 1½ to 1. Assuming the ground to be level in a direction transverse to the centre line, calculate the volume contained in a length of 120 meters, the centre heights at 20 m intervals being in meters 2.2, 3.7, 3.8, 4.0, 3.8, 2.8, 2.5. (8 marks)
(ii) How do you determine the capacity of a reservoir? (8 marks)

15 (a) How do you set out simple curve using Rankine's method? (16 marks)

(OR)

15 (b) (i)Where is vertical curve used what are the different types vertical curves? (4 marks)

(ii) A compound curve consisting of two simple circular curves of radius 350 m and 500 m is to be laid out between two straights. The angles of intersection between the tangents and two straights are 25 deg and 55 deg . Calculate the various elements of the compound curve. (12 marks)