Code No: RT21353 **R13** SET - 1

II B. Tech I Semester Supplementary Examinations, Oct/Nov- 2017
SURVEYING
(Agricultural Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1. a) What is the difference between bearing and declinations?
   b) What are the different methods of leveling?
   c) Explain how to determine the capacity of a reservoir?
   d) Write the principles of electronic Theodlite?
   e) What are the different Types of curves?
   f) What is the difference between GIS & GPS?

PART -B

2. a) Explain various methods for determining the width of a river.
   b) The area of the plan of an old survey plotted to a scale of 10m to 1cm measures now as 100.2 Sq.cm as found by planimeter. The plan is found to have shrunk so that a line originally 10cm long now measures 9.6cm only. There was also a note on the plan that the 20m chain used was 8cm too short. Find the true area of the survey.

3. a) What is indirect method of locating contours? Explain step by step procedure of locating contours by method of squares.
   b) What do you mean by interpolation of contours? Explain arithmetical method of interpolation of contours

4. a) State and explain Simpson's rule. Derive an expression for it.
   b) A series of perpendicular offsets were taken from a survey line to a curved boundary. Determine the area using both Tragezoidal and Simpson's Rules for the data given below 15m.

Distance(m	0	15	30	45	60	75	90	105	120
Offset (m)	3.25	5.05	4.2	6.65	8.70	6.30	3.20	4.5	5.65

5. In order to determine the elevation of the top Q of a signal, observations were made from two instrument stations A and B which are in line with the signal. The stations A and B are 80m apart. The vertical angles of Q as observed at A and B were respectively $30^0$45' and $16^0$10'.The staff reading on the bench mark of elevation 178.450 was 2.850m when the instrument was at A and 3.580m when the instrument was at B. Determine the elevations of the top and foot of the signal if the height of the signal above its base is 5m?

6. a) What are the usual difficulties in ranging simple curves and how are they obviated.
   b) Calculate the ordinates from a 150m long chord at 10m interval to set out a simple circular curve of 8^0
7. What are the components of a typical Geographical Information System and explain them briefly
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