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

II B. Tech I Semester Supplementary Examinations, May - 2019
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 are the Survey stations? How will you select them?
   b) What are the desired relation, object and necessity of adjusting the cross- hairring?
   c) Name the three methods of measuring volume. For what purpose each one of these is use?
   d) What are the different errors in Theodolite work? How are they eliminated?
   e) Describe the procedure to determine the constants of a tacheometer in the field.
   f) Suggest possible users of a GIS and how it might benefit them.

PART -B

2. a) What is local attraction? How is it detected and removed.
   b) Find which station is free from local attraction and work out the correct bearings.

Line	F.B.	B.B.
AB	$191^0 45^1$	13^0
BC	$39^0 30^1$	$220^0\ 00^1\ 30^{11}$
CD	$22^0 15^1$	$200^0\ 30^1$
DE	$242^0 45^1$	$60^0\ 45^1$
EA	$330^0 15^1$	$147^0\ 45^1$

3. a) With the help of neat sketches explain the uses of contour maps.
   b) What is the principle of the indirect methods of locating contours? Briefly explain any two methods giving their merits and demerits
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4. Calculate the area between the survey line, the hedge and the end offsets by
(a) Trapezoidal rule and
(b) Simpson's rule
From the following field measurements of perpendicular offsets taken from a chain line to a hedge:

Chainage (m)	Offsets (m)	Chainage(m)	Offsets (m)
0	7.6	70	9.5
15	8.5	80	8.3
30	10.7	100	7.9
45	12.8	120	6.4
60	10.6	140	4.4

5. a) Differentiate between i) Transiting and swinging of the telescope. ii) Face left and Face right readings.

b) The table below gives the lengths and bearings of the lines of a traverse ABCDEA,the length and bearing of EA having been omitted. Calculate the length andbearing of the line EA.

Line	Length(m)	Bearing
AB	204.0	$87^0\ 30^1$
BC	226.0	$20^0\ 20^1$
CD	187.0	$280^0\ 00^1$
DE	192.0	$210^0\ 30^1$
EA	?	?

6. a) What do you understand by tacheometry? What is the utility of an analytic lens in a tacheometer?

b) The vertical angles to vanes fixed at 1 m and 3 m above the foot of the staff held vertical at a station A, were $+2^015'$ and $+5^050'$, respectively. Determine the horizontal distance and reduced level of A if the height of the instrument axis is 235.665 m above datum.

7. a) Explain about the segments of Global Positioning system?

b) Define geographic information system.