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Reg. No. : | | | | | | | | | | |

Question Paper Code: 54A06

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Fourth Semester

Agriculture Engineering

15UAG406 – SURVEYING FOR AGRICULTURE

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The main Principle of surveying is to CO1 -R

   (a) work from part to whole (b) Higher level to lower level

   (c) Work from whole to part (d) Lower level to higher level

2. Which instrument is not using in the chain surveying? CO1-R

   (a) Ranging Rod (b) Cross Staff (c) Plumb bob (d) Pegs

3. Example for Reduced bearing is CO2- R

   (a) 156^0 (b) E 36^0 45’ N (c) 43^0 30’ (d) S 25^0 42’ W

4. The line passing through geographic north to south pole is known as CO2- R

   (a) True meridian (b) False meridian (c) Magnetic needle (d) dip

5. The operation of running levels for the purpose of checking the series of levels,which have been previously fixed CO3 -R

   (a) Different levelling (b) Profile Levelling

   (c) Check levelling (d) Reciprocal levelling

6. Fore Sight is the ……in any setup of the instrument CO3- R

   (a) Firstreading (b) Permanent reference point (c) Event (d) Last reading

7. Trapezoidal formula is applicable for only ……. no.of cross sections CO4- R

   (a) Even number (b) Odd number (c) Any (d) Infinite

8. A closed contour line on a map represents CO4- R

(a) Plan (b) Elevation (c) Ridge (d) Depression or Hill

9. What is the least count of the Conventional Theodolite? CO5 -R

(a) 1' (b) 20" (c) 1" (d) 20^0

10. Tacheometric surveying is the branch of surveying its deals with CO5 -R

(a) Elevations (b) Horizontal and Vertical distance

(c) To find the bearing (d) None of these

PART – B (5 x 2= 10Marks)

11. State Simpson's rule and Give the formula. CO1- R

12. Write the names of the instruments used in plane table surveying. CO2 -R

13. Write short note on "Dumpy Level". CO3- R

14. List out the characteristics of contours. CO4- R

15. What are the permanent adjustments of a theodolite? CO5 -R

PART – C (5 x 16= 80Marks)

16. (a) What is chain surveying? Explain the various operations involved in chain surveying. CO1- U (16)

Or

(b) A steel tape was exactly 30 m long at 20°C when supported throughout its length under a pull of 10 kg. A line was measured with this tape under a pull of 15 kg and a mean temperature of 32°C and found to be 780 m long. The cross sectional area of the tape is 0.03 cm^2 and its total weight is 0.693 kg. Coefficient of thermal expansion and Young's modulus of the steel is 11x10-6/°C and 2.1x106 kg/cm^2 respectively. Compute the true length of the line if the tape was supported during measurement (a) at every 30 m and (b) at every 15 m. CO1- App (16)

17. (a) The bearings of the sides of a closed traverse ABCDEA are as follows: CO2- App (16)

Line	FB	BB
AB	$107^0 15'$	$287^0 15'$
BC	$22^0 0'$	$202^0 0'$
CD	$281^0 30'$	$101^0 30'$
DE	$181^0 15'$	$1^0 15'$
EA	$124^0 45'$	$304^0 45'$

Compute the interior angles of the traverse and exercise measurement checks.

Or

	(b)	What are the types of plane table surveying? Explain the method of radiation and intersection in plane table surveying?	CO2 -U	(16)
18.	(a)	Describe the collimation method of reducing the levels. Compare the collimation method with the rise and fall method.	CO3- U	(16)
		Or		
	(b)	The following staff reading was taken with a level and a 4m levelling staff and a continuously sloping ground at a common interval of 30m. The readings are 0.905, 1.745, 2.345, 3.125, 3.725, 0.545, 1.390, 2.055, 2.655, 2.955, 0.595, 1.015, 1.850, 2.655, and 2.945. The R.L of the first station is 395.500m. Calculate the R.L of the different points by using Height of Instrument method and find the gradient of AB.	CO3 -Ana	(16)
19.	(a)	Explain how you will obtain in the field the constants of a tacheometer.	CO4- U	(16)
		Or		
	(b)	Explain the types of leveling.	CO4- Ana	(16)
20.	(a)	Describe with sketches, the characteristics of contours.	CO5- U	(16)
		Or		
	(b)	Explain the procedure for repetition and reiteration method to measuring horizontal and vertical angle.	CO5- U	(16)