A **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 54A06

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2022

Fourth Semester

Agriculture Engineering

15UAG406 – SURVEYING FOR AGRICULTURE

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10x 1 = 10 Marks)

1. The object of surveying is to prepare a CO1-R

   (a) Drawing (b) Cross section (c) Sketch (d) Map

2. Which of the following scale is the smallest one CO1-R

   (a) 1 cm= 5m (b) R.F = 1/5000 (c) 1:1,000 (d) 1 cm = 5km

3. The WCB of line is 330^0 its quadrantal bearing is CO2-R

   (a) W 30^0 N (b) N 30^0 W (c) W 60^0 N (d) W 60^0 S

4. The tool which consists of metal rule 40cm long, 3cm wide and fitted with two vanes at the ends is called _____ CO2-R

   (a) Alidade (b) Scale (c) Compass (d) Sprit Level

5. Elevation is drawn CO3-R

   (a) Above plan (b) Below plan (c) On right side of plan (d) On left side of plan

6. Subtense bar is an instrument used for CO3-R

   (a) Levelling

   (b) Measurement of horizontal distances in plane areas

   (c) Measurement of horizontal distances in undulated areas

   (d) Measurement of angles

7. The number of horizontal cross wires in a stadia diaphragm is CO4-R

(a) One (b) Two (c) Three (d) Four

8. The…… distance between any consecutive contours is called contour interval CO4-R

(a)Vertical (b) Horizontal (c) Angles (d) Any two point

9. Tachemetric equation CO5-R

(a) D = Ks - C (b) D = Ks / C (c) D = Ks * C (d) D = Ks+C

10. Theodolite is an instrument used for CO5-R

(a) To find the bearings only (b) To find the vertical angles only

(C) To find the horizontal angles only (D) All of these

PART – B (5 x 2= 10Marks)

11. Define Surveying. CO1-R

12. Define well-conditioned triangle. CO2-R

13. Define Fore and back bearing. CO3-R

14. What are the types of bench mark? CO4-R

15. Write the components of Total Station. CO5-R

PART – C (5 x 16= 80Marks)

16. (a) What is meant by ranging a line? Explain its methods. CO1-App (16)

Or

(b) A 30m steel tape was standardized at 20^oC and under a pull of 10kg. A survey station has been measured using this tape under a pull of 12kg, at a mean temp 30^oC. The c/s area of the tape is $0.025cm^2$ its weight per unit length is 25g/m. α is 11 x $10^{-6}/^oC$ and E for steel is 2.1 x 10^{-6} kg/cm^2. Compute the true horizontal distance. CO1-App (16)

17. (a) The following are the bearings observed in traversing with a compass an area where local attraction was suspected. Find the amount of local attraction at different stations, the correct bearings of the lines. CO2-App (16)

Line	AB	BC	CD	DE	EA
FB	68° 15'	148° 45'	224° 30'	217°15’	327° 45'
BB	248° 15'	326° 15'	46° 00'	38° 15'	147° 45'

Or

	(b)	What are the instruments used in plane table surveying. Explain in detail.	CO2-Ana	(16)
18.	(a)	Write short notes on various method of leveling. Explain with neat sketch.	CO3-Ana	(16)
		Or		
	(b)	The following consecutive readings were taken with a leveling instrument of intervals of 20m. 2.375, 1.730, 0.615, 3.450, 2.835, 2.070, 1.835, 0.985, 0.435, 1.630, 2.255 and 3.630m. The instrument was shifted after the fourth and eight readings. The last reading was taken on a B.M of R.L 110.200m. Find the R.Ls of all the points. Using Rise and fall method. And find out the average gradient between the ends.	CO3-Ana	(16)
19.	(a)	Explain the procedure for conducting longitudinal section (LS) with neat sketch.	CO4-U	(16)
		Or		
	(b)	Explain the characteristics of contour with neat diagram.	CO4-U	(16)
20.	(a)	Write down the Temporary and Permanent adjustment of Theodolite followed for successful conduction of the survey.	CO5-U	(16)
		Or		
	(b)	Write short notes on Total Station and GPS with its components.	CO5-U	(16)