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

Question Paper Code: 96A05

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

Fourth semester

Agriculture Engineering

19UAG405- Surveying and Levelling

(Regulation 2019)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. In a metric chain, no. of links per meter can be CO2- App

   (a) 2 (b) 5 (c) 8 (d)10

2. The surveys are to fix the boundaries of municipalities are CO1- U

   (a) Cadastral surveys (b) City surveying

   (c) Engineering surveys (d) Military surveys

3. The whole circle bearing of the line AB is 50° and of line BC is 120°.The defection angle at B from AB to BC is CO2- App

   (a) 70° (b) 50° (c) 110° (d) 120°

4. In plane table surveying the operation which must be carried out is CO1- U

   (a) Resection (b) intersection (c) orientation (d) traversing

5. The height of collimation method is ---- and ---- labour is required as compared to rise and fall method CO1- U

   (a) Rapid ,more (b) Rapid ,less (c) slow,more (d) slow ,less

6. In permanent adjustment of levels ,two peg is done to correct or adjust CO1- U

   (a) Line of collimation (b) level tube

   (c) cross –hair ring (d) cross-hair ring and line of collimation

7. Contour lines cross a ridge or valley line at CO1- U

   (a) 45° (b)90° (c)0° (d) 180°

8. The cross-section area of river flow can be calculated by using following formula CO1- U

(a) simpson's rule (b) trapezoidal rule (c) both(a) and(b) (d) Thumb rule

9. Which of the following indicates the correct set of the combination of total station? CO1- U

(a) Theodolite, compass (b) Theodolite, EDM

(c) Electronic theodolite, EDM (d) EDM, GPS

10 During which year the project on GPS was launched? CO1- U

(a) 1970 (b)1971 (c)1972 (d)1973

PART – B (5 x 2= 10 Marks)

11 Differentiate between well-conditioned and ILL -conditioned triangles CO1- U

12 Change the following QB to WCB: CO2- App

(a) S36° 30'W (b) S43° 40'E (c) N45° 30'E

13 List out the personal errors in levelling.. CO1- U

14 How will you analyze the capacity of the reservoir?. CO3- Ana

15 State the applications of GPS. CO2- App

PART – C (5 x 16= 80 Marks)

16 (a) Describe with neat sketchs how an obstacle which interrupts chaining but not ranging can be crossed over the chain survey. CO2- App (16)

Or

(b) Prepare a list of accessories required for a chain survey? Explain the functions of each. CO1- U (16)

17 (a) The following bearings were taken on a closed compass Traverse CO2- App (16)

Line	FB	BB
AB	80° 10'	259°0'
BC	120°20'	301° 50'
CD	170°50'	350°50'
DE	230° 10'	49° 30'
EA	310° 20'	130° 15'

Compute the interior angles and correct them forobservational errors. Assuming the observed bearing of theline CD to be correct. Adjust the bearing of the remainingsides

Or

	(b)	Explain the method of conducting two point problem in the field	CO1- U	(16)
18	(a)	The following consecutive readings were taken with a level and 5 meter leveling staff on continuously sloping ground at a common interval of 20 metres: 0.385, 1.030, 1.925, 2.825, 3.730, 4.685, 0.625, 2.005, 3.110 and 4.485. The reduced level of the first point was 308.125 m. Calculate the reduced levels of the points by rise and fall method and also the gradient of the line joining the first and the last point.	CO3- App	(16)
		Or		
	(b)	What are the different sources of error in leveling and explain them in detail	CO1- U	(16)
19	(a)	Explain in detail about the construction, characteristics and uses of MASS- HAUL diagram	CO1- U	(16)
		Or		
	(b)	The following area a series of offsets taken from a chain line to a curved boundary line with offsets intervals of 15m 0,2.62,3.86,5.62,7.85,8.25,4.25,0 compute the area between the cahin and the curved boundary and the end offsets, calculate by simpons and trapezoidal rules.	CO2- App	(16)
20	(a)	Explain in detail about various components of a transit theodolite with neat sketches	CO1- U	(16)
		Or		
	(b)	Explain the various types of GPS devices and their uses.	CO1- U	(16)