A   **Reg. No. :**

Question Paper Code: 54A06

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. In chain surveying tie lines are primarily provided   CO1- R

    (a) To check the accuracy of survey   (b) To take offsets for survey

    (c) To avoid long off sets   (d) To increase number of chain lines

2. The line normal to plumb line.   CO1- R

    (a) Horizontal line   (b) Vertical line   (c) Datum line   (d) Level line

3. A bearing of a line is also known as   CO2- R

    (a) Magnetic bearing   (b) True bearing   (c) Azimuth   (d) Reduced bearing

4. The main principle of surveying is to work from   CO2- R

    (a) Part to whole   (b) Whole to part

    (c) From higher level to lower level   (d) From lower level to higher level

5. Volume of earth is calculated by   CO3- R

    (a) Mean mass   (b) End areas   (c) Trapezoidal formula   (d) All the above

6   Detailed plotting is generally done by   CO3- R

    (a) Radiation   (b) Traversing   (c) Resection   (d) All the above

7   Two contour lines having same elevation   CO4- R

   (a) Cannot cross each other   (b) Can cross each other

   (c) Cannot unite together   (d) Can unite together

8   Which of the following method of contouring is most suitable for a hilly area   CO4- R

   (a) Direct method   (b) Square method

   (c) Cross-section method   (d) Tachometric method

9   The process of turning the telescope about the vertical axis in a
    horizontal plane is   CO5- R

   (a) Transiting   (b) Reversing   (c) Plunging   (d) Swinging

10 GPS means   CO5- R

   (a) Geometry positioning system   (b) Global positioning system

   (c) Geographical positioning system (d) Global post system

PART – B (5 x 2= 10 Marks)

11. Define well conditioned triangle.   CO1- R

12. List out the various instruments used in plane table surveying.   CO2- R

13. Compare rise and fall method with height of collimation method.   CO3- R

14. Define contour.   CO4- R

15. List out the temporary adjustment of a transit theodolite.   CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) Explain the procedures involved in method of chaining along a   CO1- U   (16)
          flat and sloping ground.

Or

     (b) A line was measured with a steel tape which was exactly 30m at   CO1- E   (16)
          $25^{o}C$ and at a pull of 15Kg , the measured length being 1950m.
          The temperature during measurement was $35^{o}C$ and the pull
          applied was 25Kg. assuming the tape to be supported at every
          30m, calculate the true length, if the cross sectional area of the
          tape was 0.020 square cm, coefficient of thermal expansion of
          the material per $^{0}C = 3 \times 10^{-6}$, modules elasticity $E = 2.1 \times 10^{6}$
          Kg/cm^{2}. And weight of the tape material $= 7.8 gm/cm^{3}$.

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17. (a) Discuss the merits and demerits between Prismatic and surveyors CO2- U   (16)
       compass.

                                    Or

    (b) Explain the intersection method of plane table surveying in detail CO2- U   (16)
       with sketches.

18. (a) Explain Reciprocal Leveling in detail.   CO3- U   (16)

                                    Or

    (b) The following staff readings were observed successively with a CO3- App   (16)
       level. The instrument having been moved after the second , fifth,
       and eighth readings . 0.675, 1.230, 0.750, 2.565, 2.225, 1.935,
       1.835, 3.220, 3.115, and   2.875   The first reading was taken
       with a staff   held on a bench mark of RL = 1000.000. Enter the
       readings in a level book and find the reduced levels of all the
       points.

19. (a) Discuss the various characteristics and uses of contours.   CO4- U   (16)

                                    Or

    (b) Explain the method of determining capacity of reservoirs.   CO4- U   (16)

20. (a) Explain the measurement of horizontal angle by repetition CO5- U   (16)
       method.
                                    Or

    (b) Discuss the merits of Total station, and its working principle.   CO5- U   (16)

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