A   Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Convert 1 cent is equal to how many square feet   CO1-U

    (a) 435.6 sqft   (b) 235.6 sqft   (c) 315 sqft   (d) 500 sqft

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

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

4. The direction of a line relative to a given meridian is called   CO1-U

    (a) Bearing   (b) Declination   (c) Angle   (d) Dip

5. The datum adopted for India is the   CO1-U

    (a) MSL at Madras   (b) MSL at Bombay   (c) MSL at Karachi   (d) all of the above

6. The least count of levelling staff is   CO1-U

    (a) 0.001m   (b) 0.005m   (c) 0.015m   (d) 0.002m

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

    (a) $45°$ (b) $90°$ (c) $0°$ (d) $180°$

8. Closed contours of decreasing values towards their centre, represent a   CO1-U

    (a) Hill   (b) Depression   (c) saddle   (d) River bed

9. The horizontal circle in a theodolite is graduated in   CO1-U

   (a) the quadrantal system from 0° to 90° in the four quadrants

   (b) the whole circle system from 0° to 360°

   (c) the semi-circle system from 0° to 180° in the right and left halves

   (d) a way similar to that in a prismatic compass

10. What is the purpose of focusing is done in theodolite?   CO1-U

    (a) Eliminate parallax error   (b) Eliminate instruments error

    (c) Minimize the error   (d) Eliminate the error

PART – B (5 x 2= 10 Marks)

11. How is the chain folded and unfloaded?   CO1-U

12. Under what circumstances the plane table surveying is adopted?   CO1-U

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

14. What do you mean by contour interval?   CO1-U

15. State the applications of GPS.   CO1-U

PART – C (5 x 16= 80 Marks)

16. (a) A 30m steel tape was standardized at $20^{\circ}C$ and under a pull of   CO2 -App   (16)
       5kg.the tape was used in catenary at a temperature of $25^{\circ}C$ and
       under a pull of P kg. The c/s area of the tape is $0.02cm^2$,and its
       weight per unit length is 22g/m.α is 11 x 10-6 per$^{\circ}C$ and E for
       steel is 2.1×10^6 kg/cm^2.compute the correct horizontal distance
       ,if P is equal to (i) 5kg(ii) 11kg

                                    Or

    (b) A 30m steel tape was standardized at $20^{\circ}C$ and under a pull of   CO2-App   (16)
       5kg.the tape was used in catenary at a temperature of $25^{\circ}C$ and
       under a pull of P kg. The c/s area of the tape is $0.02cm^2$,and its
       weight per unit length is22g/m.α is 11 x 10^{-6}per$^{\circ}C$ and E for steel
       is 2.1×10^6 kg/cm^2.compute the correct horizontal distance ,if P is
       equal to (i) 6kg(ii) 10kg

17. (a) The bearing of size traverse A,B,C,D,E are as follows   CO2-App   (16)

side	FB	BB
AB	107°15'	287°15'
BC	22°00'	202°0'
CD	281°30'	101°30'
DE	189°15'	9°18'
EA	124°45'	304°45'

Compute the interior angle of the traversing.

Or

(b) Explain in detail about the parts of prismatic compass with neat   CO2-App   (16)
sketches

18. (a) The following readings were observed with a levelling   CO2-App   (16)
instrument, the instrument was shifted after 5th and 11th reading.
0.585, 1.010, 1.735, 3.295, 3.755(5th) 0.350, 1.300, 1.795, 2.575,
3.375
3.805 (11th), 1.735, 0.635, 1.605 Determine the RLs of various
points if the reduced level (RL) of a point on which the first
reading was taken is 136.440 gives and applies the check.

Or

(b) The following readings were observed with a levelling   CO2-App   (16)
instrument, the instrument was shifted after 5th and 11th reading.
0.585, 1.010, 1.735, 3.295, 3.775(5th) 0.350, 1.300, 1.795, 2.575,
3.375
3.895 (11th), 1.735, 0.635, 1.605 Determine the RLs of various
points if the reduced level (RL) of a point on which the first
reading was taken is 100.00 gives and applies the check

19. (a) Explain in detail about the construction, characteristics and uses   CO1-U   (16)
of MASS- HAUL diagram.

Or

(b) An embankment of width 10m and side slopes 1.5:1 is required   CO1-U   (16)
to be made on the ground which is levelled in a direction
transverse to the center line. The center height at 40 m intervals is
as follows 0.90, 1.25, 2.15, 2.50, 1.85, 1.35 and 0.85. Calculate
the volume of earthwork to be carried out informing the
embankment.

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20. (a) Explain the various types of GPS devices and their uses.   CO1-U   (16)

Or

    (b) Explain in detail about the various sources of errors in theodolite   CO1-U   (16) surveying.

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