313321

12526

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answer with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: **10**

a) State any two advantages of Tacheometry.

b) Define compound curve.

c) State any two uses of digital theodolite.

d) Define remote sensing.

e) State any two application of GPS.

f) State any two merits of photogrammetry surveying.

g) Define Aerial surveying.

P.T.O.

Marks

2. Attempt any THREE of the following: **12**

a) List any four essential character of Tacheometer.

b) Draw figure of simple circular curve and show the following:–

i) Tangent length

ii) Deflection angle

iii) Apex distance

iv) Long chord.

c) State the four advantages of total station.

d) Explain the application of remote sensing in civil engineering.

3. Attempt any THREE of the following: **12**

a) State any four situations where tacheometry is preferred.

b) Enlist types of curves used in road and railway alignment.

c) State any four component parts of micro-optic theodolite.

d) State any four uses of aerial surveying.

4. Attempt any THREE of the following: **12**

a) State the meaning of analytic lens in a tacheometer. Also state its purpose.

b) State the principle of EDM with sketch.

c) List the fundamental keys in total station with its use.

d) State the components of GIS.

e) State the classification of Drones according to DGCA.

5. Attempt any TWO of the following: **12**

a) Describe the field method of determining constant of tacheometer.

b) Calculate the ordinates at every 12 mt interval to set out a simple circular curve having long chord of 120 m and radius of 200 m Illustrate your answer with neat sketch.

c) Explain the procedure for measurement of vertical angle using digital theodolite.

Marks

6. Attempt any TWO of the following: **12**

a) Explain how remote sensing can be applied to land use.

b) Explain the setting of curve by Rankine's deflection angle method.

c) A tacheometer fitted with analytic lens was set up at station O and the following reading were taken on a staff held vertical. Find the horizontal distance 'OB' and RL of 'B' if RL of BM is 50.000 m. Take the constant of tacheometer as 100.

Inst. Station	Staff Station	Vertical angle	Stadia readings
O	BM	+ 7° 30'	0.900 1.200 1.500
O	B	– 2° 30'	1.100 1.350 1.600