The Technion – Israel Institute of Technology **Faculty of Aerospace Engineering**

Satellite Orbit Control 0860290

Winter semester 24-25

Assignment No 8

(Hand-in by 4/2/25)

A satellite is placed in an Earth Repeat circular orbit with period of 100 min. The satellite performs a D maneuver to maintain the Earth Repeat property.

At the beginning of the D maneuver cycle (point A), the ground track deviation was 20 km.

At t=5 days, the ground track deviation was -10 km, and the rate of change of the ground track deviation was negative.

Find:

a) Altitude decay rate.
b) Altitude difference between A and C (the end of the maneuver cycle).
c) Velocity change that is required to raise the altitude from C to A.

Comment: This problem simulates a possible final examination problem. You should solve this problem in 1 hour.