Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ANE) (Sem.–6)

ELEMENTS OF SPACECRAFT ENGINEERING

Subject Code : ANE-323

Paper ID : [A1229]

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION–A

1. Answer briefly :

a) Define Newton's first law of motion.

b) Draw Copernican scheme's figure.

c) Define Hohmann transfer.

d) Define Atmosphere scale height.

e) Define total impulse.

f) What do you mean by Trajectories?

g) Define invariable plane.

h) Define 40-40 mechanism.

i) What is a dual-spin space craft?

j) What is decay lifetime?

SECTION–B

2. Discuss Satellite tracking.

3. Discuss earth-oblateness effects.

4. Discuss the general torque-free rigid body.

5. Discuss gravity-turn trajectories.

6. Discuss the sphere of activity.

SECTION–C

7. Discuss planetary flyby.

8. Find the various expressions for decay lifetime with reference to earth-satellite operations.

9. Discuss Two-body problem and find the various expressions associated with it.