

Code: 9A21606

B.Tech III Year II Semester (R09) Supplementary Examinations December/January 2015/2016

INTRODUCTION TO SPACE TECHNOLOGY

(Aeronautical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Describe the types of space mission that have been fulfilled since 1957.
- 2 Describe with the help of neat sketches, thrust generation by a turbo-pump fed liquid engine.
- 3 Derive an expression for the culmination altitude of a single stage rocket generating a constant thrust and flying vertically up. Assume a homogenous gravity field.
- 4 Describe different types of trajectories followed by the reentry vehicles.
- 5 Derive an expression for the radial distance of a satellite from the centre of the earth and prove that the orbit is a conic section.
- 6 What is orbital transfer? What are the parameters affected in an orbital transfer? What are the different kinds of orbital transfers?
- 7 Explain how the stability of a satellite in its orbit is ensured.
- 8 What are the different modes of communication from and to a satellite?
