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BAS-025

B.Tech. AEROSPACE ENGINEERING (BTAE)

Term-End Examination

June, 2018

00043

BAS-025 : SPACE DYNAMICS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any* ***seven*** *questions. All questions carry equal marks.*

1. (a) Discuss the space environment peculiarities.

(b) Explain the different layers of Earth's atmosphere. *10*

2. Describe Cowell's method and Encke's method in detail. *10*

3. Deribe an expression for the escape velocity of a satellite from Earth. *10*

4. Discuss the effect of space environment on the selection of materials of spacecraft. *10*

5. Explain the difference between chemical rocket propulsion and electrical rocket propulsion system used for spacecraft flights. *10*

6. Describe the general aspects of satellite injection. *10*

7. Explain the following in brief : *10*

(a) Time of flight

(b) Flight path angle

8. (a) Derive and explain the significance of the Jacobi integral.

(b) How does one estimate the orientation of trajectory plane for a ballistic missile ? *5+5*

9. What is optimal flight for a ballistic missile ? How can it be estimated using graphical technique ? *10*

10. Explain Hohmann trajectory for interplanetary transfer. *10*