

Code.No: 37169

R05

SET-2

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
IV.B.TECH - I SEMESTER REGULAR EXAMINATIONS NOV/DEC, 2009
PROPELLANT TECHNOLOGY
(AERONAUTICAL ENGINEERING)

Time: 3hours

Max.Marks:80

Answer any FIVE questions
All questions carry equal marks

- - -

1. Write short notes on

- (a) Aviation turbine fuels
- (b) Petroleum products
- (c) Tests to be conducted on aviation fuels
- (d) Flash point

[4+4+4+4]

2. Explain in detail Composite propellants and metallized composite propellants. [16]

3. Distinguish between fuel and oxidizer. Explain in detail. [16]

4. Write short notes on

- (a) Ullage volume (b) hypergolic (c) specific impulse (d) bi-propellant

[4+4+4+4]

5.(a) Compare volume loading and mass loading for liquid propellants in a rocket. What is outage and why is it important?

(b) Why is close tolerance on propellant loading necessary and how do you achieve it?

[8+8]

6. Describe the properties of cryogenic propellants and explain how the superiority of one over the other is established. [16]

7. Write short notes on (a) Joule – Thompson effect (b) Cascade process (c) problems involved in loading cryo propellants into tanks of a rocket (d) Different types of Helium.

[4+4+4+4]

8. Describe the different methods of testing a propellant.

[16]
