

R09

Code No: 58095

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year II Semester Examinations, September - 2020

LAUNCH VEHICLE AND MISSILE TECHNOLOGY

(Aeronautical Engineering)

Time: 2 hours

Max. Marks: 75

**Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) Write a short note on similarities and differences in rockets and missiles.
- b) Mention some of the criteria's in the selection of materials for launch vehicles. [7+8]
- 2.a) Discuss briefly propulsion system used in missiles.
- b) Explain the need of control and guidance of missiles. [7+8]
- 3.a) Describe the principal features of solid propellant rocket.
- b) What properties of solid propellant improve the performance? [7+8]
- 4.a) What is propellant grain and how its design effects the performance of rocket.
- b) Which type of injectors are used in liquid propellant rockets. [7+8]
5. Explain about lateral aerodynamic, lateral damping and longitudinal moments of a rocket. [15]
- 6.a) Write a short note on rocket dispersion and its need.
- b) What are the design considerations for re-entry vehicles? [7+8]
- 7.a) Discuss about stage separation dynamics.
- b) Mention different types of thrust vector mechanisms with neat sketches. [7+8]
8. Explain the instrumentation and data management systems used in rocket testing. [15]

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