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Roll No. ....

**H341**

**B.Tech. EXAMINATION, May 2019**

(Eighth Semester)

(B. Scheme) (Main & Re-appear)

(AER)

AER402B

ROCKETS AND MISSILES

*Time : 3 Hours]*

*[Maximum Marks : 75*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

(3-21/14)M-H341

**P.T.O.**

### Unit I

1. What is difference between rockets and missile ? Discuss the classification of rockets and missile. **15**
2. (a) What are the aerodynamic characteristics of Air Frame Components ? **8**  
(b) Explain the different fore body shapes. **7**

### Unit II

3. What do you mean by drag and its classification ? Explain the Boost Glide Trajectory. **15**
4. (a) Explain the powered and unpowered flight. **8**  
(b) Discuss the concept of thrust misalignment. **7**

### Unit III

5. (a) What do you mean by the stability and control ? Explain the various types of stabilities with neat sketch. **8**

- (b) Explain the concept of longitudinal stability and derive an expression for two degree of freedom analysis. **7**

6. Explain with neat sketch cruciform configuration in the directional control. Discuss in detail the wing and tail contribution on directional control. **15**

### Unit IV

7. What do you mean by manoeuvring flight ? Explain the concept of flat turn for cruciform and monowing. **15**
8. What do you mean by Dynamic Stability ? Explain with neat sketch the Longitudinal and Lateral Dynamics. **15**