



# CBCS SCHEME

21AE651

## Sixth Semester B.E. Degree Examination, June/July 2024 Introduction to Aerospace History

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. Explain how the Aero industry was supported and developed during world War – I. (10 Marks)  
b. Contrast different types of missiles based on their propulsion system. (10 Marks)

OR

- 2 a. Describe the construction and applications of Airships. (10 Marks)  
b. Explain the working principle of Hot air balloons. (10 Marks)

### Module-2

- 3 a. Illustrate the concept of the aerodynamic forces acting on the flight. (10 Marks)  
b. Explain the primary components of aeroplane and their functions. (10 Marks)

OR

- 4 a. Explain the concept of standard atmosphere with neat sketch. (10 Marks)  
b. Illustrate the concept of the NACA airfoil series in aircraft Design. (10 Marks)

### Module-3

- 5 a. Explain the different parts of the wing and their function. (10 Marks)  
b. Draw and explain the airfoil geometry with neat sketch. (10 Marks)

OR

- 6 a. Compare the different types of wing shapes and their aerodynamic advantages. (10 Marks)  
b. Explain the concepts of Reynolds number with proper details. (10 Marks)

### Module-4

- 7 a. Describe the difference between Range and Endurance. (10 Marks)  
b. Derive the equation for Rate of climb. (10 Marks)

OR

- 8 a. Explain the working principle of Turboprop engine with neat sketch. (10 Marks)  
b. Explain the working principle of Turbofan engine with neat sketch. (10 Marks)

### Module-5

- 9 a. Explain the basic principle of aircraft stability with relevant figure. (10 Marks)  
b. Draw and explain the function of different types of flight controls on an aircraft. (10 Marks)

OR

- 10 a. Describe the mechanical control system of an aircraft and how it operates. (10 Marks)  
b. Explain the concept of a fly – by – wire control system in aircraft. (10 Marks)

\* \* \* \* \*

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.