

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
Diploma Engineering, Mid semester Examination

Semester: 5**Subject Code: 03613301****Subject Name: Aerodynamics****Date: 05/08/2022****Time: 1hr: 30min****Total Marks: 40****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. English version is considered to be Authentic.

- Q.1 Answer any six out of Ten. (2 Marks Each) (12)**
1. Define Airfoil and draw its neat sketch
 2. Enlist various stresses acting on aircraft
 3. Define mean camber line and chord line
 4. Describe the forces acting on an aircraft with figure
 5. Define aspect ratio and mean chord
 6. Define Circulation.
 7. Define Kutta Jowkowski Theorem
 8. Define Taper Ratio.
 9. Define Geometric twist of wing.
 10. Which are the basic two sources for generation of Aerodynamic force.
- Q.2 A) Explain Airfoil Nomenclature with neat Sketch. (03)**
- OR**
- A) Explain forces and moments acting on an aircraft. (03)
- B) Explain NACA 4 digit series with example. (03)
- OR**
- B) Explain NACA 5 digit series with example. (03)
- C) Derive the equation of Lift and Drag over Airfoil. (04)
- OR**
- C) Explain construction and working of low speed Wind Tunnel (04)
- D) Write a short note on Upwash and Downwash. (04)
- Q.3 A) Explain ground effect with figure. (03)**
- B) Give geometrical characteristics of finite wing. (03)
- C) Explain types of Drags. (04)
- D) Explain coefficient of lift versus angle of attack curve (04)