

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc (Hons.) (Aircraft Maintenance) (2018 & Onwards) (Sem.-1)

AERODYNAMICS

Subject Code : BSCARM-101-18

M.Code : 75632

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Write briefly :**

- (a) Streamline
- (b) Ruddervators
- (c) Spoilers
- (d) Aerodynamic centre
- (e) Wave drag
- (f) Similarity parameters
- (g) Prandtl-Glauert rule
- (h) Lapse rate
- (i) Aerodynamic heating
- (j) ISA

SECTION-B

2. Explain the flat-turn.
3. Discuss laser based velocity measurement techniques.
4. Explain how the wing sweep effects the critical Mach number.
5. With the help of a neat sketch, explain the working of vortex generators for boundary layer control.
6. Sketch and label different parts of the shock pattern around a spherically blunted cone at zero incidence in a supersonic stream.

SECTION-C

7. With the help of a neat sketch, explain the significance of aerofoil lift curve ($C_L - \alpha$). Explain how the aerofoil geometric characteristics influence the maximum lift coefficient.
8. Discuss the contribution of airplane body, wing and tail towards the static directional stability.
9. Write short notes on the following :
 - (a) Air data computers
 - (b) Pitot static systems

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.