

End Semester Examinations - 2015-16 Even Semester - May 2016

14AE2014 Aircraft Performance

Set A

Time : 3 hrs
Total Marks: 100

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1. Define drag and explain the various types of drag used in aerodynamic design with proper sketch.(14)
Differentiate Skin friction drag and Pressure drag with neat diagram.(6)

OR
 2. Write short notes on the following
 - a. Airfoil Nomenclature.(6)
 - b. Pressure distribution over a circular cylinder and aerofoil.(6)
 - c. Differentiate streamlined and bluff bodies with appropriate diagram.(8)
 3. Derive the equations of motion for steady level flight with neat sketch.(10)
Explain in detail about thrust available and thrust required for jet driven airplane with neat diagram.(10)

OR
 4. Derive the Breguet range and endurance equation for Jet driven airplane with neat sketch.(20)
 5. Define climb. Explain in detail about climb performance of flight with neat sketch.(14)
Differentiate service ceiling and absolute ceiling.(6)

OR
 6. Elaborate the Landing performance of the airplane with neat sketch.(20)
 7. Elaborate the following
 - a. Thrust Augmentation methods and Reverse thrust. (10)
 - b. High lift devices used in airplane. (10)

OR
 8. Define Load factor. Explain in detail about V-n diagram with neat sketch and state its significance. (20)
 9.
 - a. Differentiate fixed pitch and variable pitch propeller.(6)
 - b. State the Propeller nomenclature with neat sketch.(6)
 - c. Derive the Blade element theory with neat sketch.(8)
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Wishing you All the Best
