

15AE61

OR

- 6 a. Derive an expressions for Rankine Hugoniot equation for oblique shocks. (10 Marks)
b. With a neat graphs, explain the pressure turning angle in detail. (06 Marks)

Module-4

- 7 a. Derive the basic potential equation for compressible flow. (10 Marks)
b. Explain the different boundary conditions used for the flow over an airfoil. (06 Marks)

OR

- 8 a. Briefly explain the Von-Karman rule for transonic flow. (08 Marks)
b. A profile has at $M_\infty = 0.29$, the following lift co-efficients:
 $C_L = 0.2$ at $\alpha = 3^\circ$
 $C_L = -0.1$ at $\alpha = -2^\circ$
Calculate $\frac{dC_L}{d\alpha}$ for $M = 0.2, 0.4$ and 1 (08 Marks)

Module-5

- 9 a. What are various types of Wind tunnels? (08 Marks)
b. Explain various pressure measuring instruments. (08 Marks)

OR

- 10 What are various Flow visualization techniques? (16 Marks)
