

B.E DEGREE EXAMINATIONS: NOV/DEC 2014

(Regulation 2009)

Sixth Semester

AERONAUTICAL ENGINEERING

AER117: Wind Tunnel Techniques

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Pick the Non dimensional number
 - a) Prandtl number
 - b) Reynolds number
 - c) Both (a) & (b)
 - d) None of the above
2. Which of the following denotes the effect of compressibility in flow?
 - a) Weber number
 - b) Mach number
 - c) Euler number
 - d) Reynolds number
3. Trisonic tunnel is
 - a) subsonic
 - b) supersonic
 - c) Transonic
 - d) Combination of (a),(b) & (c)
4. Moisture remover is mostly used in
 - a) Subsonic wind tunnel
 - b) transonic wind tunnel
 - c) Supersonic wind tunnel
 - d) All the above
5. Turbulent sphere is used to measure
 - a) Velocity
 - b) turbulence
 - c) Temperature
 - d) 2 D turbulence
6. Calibration is
 - a) Correction of measurement
 - b) To measure difference between true and actual value
 - c) To measure difference between true and mean value
 - d) None of the above

23. a) Explain about the turbulence measurement in subsonic wind tunnel.

(OR)

b) Explain in detail about the calibration of supersonic wind tunnel.

24. a) What are different types of force measurement carried out in wind tunnel and explain anyone in detail?

(OR)

b) Explain the working principle of particle tracking velocimetry with neat sketch.

25. a) Summarize the transonic and hypersonic wind tunnel peculiarities.

(OR)

b) (i) Explain the working principle of shock tube. (7)

(ii) Write short notes on: Helium and Gun tunnels. (7)
