

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E – Aeronautical

Title of the paper: Industrial Aerodynamics

Semester: VII

Sub.Code: 526E08

Date: 27-03-2009

Max. Marks: 80

Time: 3 Hours

Session: FN

PART – A

(10 x 2 = 20)

Answer ALL the Questions

1. What are the types of winds?
2. Define the Atmospheric Boundary layer.
3. Define Betz coefficient.
4. Differentiate between vertical and horizontal axis machines.
5. What you mean by cut back angle.
6. Define Drag coefficient.
7. Draw the pressure distribution on how rise building.
8. Write the Building codes & its uses.
9. State the wake formation of Bluff bodies.
10. Define Reynolds number.

PART – B
Answer All the Questions

(5 x 12 = 60)

11. Explain in detail about the causes of variation of winds.
(or)
12. Enumerate the effect of Terrain on Gradient height.
13. Explain the special features of Industrial and Stationary Gases.
(or)
14. Write short notes on
 - (a) Power coefficient
 - (b) Momentum theory
 - (c) Comparison between industry.
15. Explain the effect of Aerodynamics of Trains and Hovercraft.
(or)
16. State and explain about the power requirement and drag coefficient of Automobiles.
17. Explain in details about the building Ventilation and Architectural Aerodynamics.
(or)
18. State and explain the effect on wind forces on buildings and also the environmental winds in city blocks.
19. Write short notes on
 - (a) Vortex induced vibrations.
 - (b) Galloping
 - (c) Stall flutter
(or)
20. Explain the effect of Reynolds Number on wake formation of Bluff shapes – in details

