

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ANE) (Sem.-6)
WIND TUNNEL TECHNIQUES
Subject Code : ANE-326
M.Code : 60535

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION 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) Define a Wind Tunnel.
- b) Name some special purpose wind tunnels.
- c) Why there is a need of diffuser after test section of a wind tunnel?
- d) What is the use of wire screens in a wind tunnel?
- e) What are the different methods of speed measurement in a wind tunnel?
- f) What are the non aeronautical uses of Wind Tunnels?
- g) What is a wind tunnel balance?
- h) What are the different boundary conditions in a wind tunnel?
- i) How the flow quality can be enhanced?
- j) Describe shadowgraph method.

SECTION-B

2. What is the difference between open and closed wind tunnel?
3. Sketch a wind tunnel and label it.
4. What is the purpose of hot wire anemometer? What are the different types?
5. How a wind tunnel is calibrated?
6. How can you measure lift & drag in a wind tunnel?

SECTION-C

7. What do you mean by boundary and buoyancy corrections? Explain the method for application of these corrections.
8. Describe the various techniques for measurement of speed and pressure in a wind tunnel. Explain laser velocimeter.
9. a) What are the different types of wind tunnel balances? Describe any one.
b) Describe the use of wind tunnel in civil engineering.

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.