Roll No. | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(AE) (Sem.–6th)

AUTOMOTIVE AERODYNAMICS

Subject Code : AE-316

Paper ID : [A0724]

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 has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a) What is meant by streamline shape of the vehicle?

b) Why automotive aerodynamics is important?

c) Define viscosity.

d) Define pressure drag.

e) What do you understand by aerodynamic noise?

f) What is shape optimization?

g) What is a transducer?

h) What is the function of rear spoiler?

i) What is the principle of wind tunnel?

j) Define drag coefficient.

SECTION-B

2. Discuss the relationship between internal and external flow of vehicle.
3. Compare the drag of a passenger car and other bluff bodies.
4. Explain aerodynamic stability.
5. What do you understand by drag reduction in commercial vehicles? Explain.
6. What are the limitations of simulation? Discuss.

SECTION-C

7. What is aerodynamic drag? Explain the analysis of aerodynamic drag.
8. Discuss the effect of aerodynamic forces on lateral deviation.
9. Write a note on wind tunnel for automotive aerodynamics.