ME

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Reg. No. : .....

Name : .....

Seventh Semester B.Tech. Degree Examination, October 2014
(2008 Scheme)
08.703 : GAS DYNAMICS (M)

Time : 3 Hours Max. Marks : 100

***Instructions** : Answer **all** questions from Part **A** and **one full** question, from **each** Module of Part **B**. **Use** of gas tables are **permitted**.*

PART – A

1. Define M* and write its significance.
2. Derive the law of conservation of mass for a control volume.
3. Explain adiabatic steady flow ellipse.
4. Define and write the significance of impulse function.
5. Show that M = 1 at the point of maximum entropy for Rayleigh flow.
6. Prove that impulse function is constant for Rayleigh flow.
7. Explain choking for Fanno flow.
8. Write a note on thickness shock wave.
9. Why does normal shock occur only for supersonic flow of a perfect gas ?
10. Write the principle of hot wire anemometer. **(4×10=40 Marks)**

PART – B

Module – I

11. Starting from fundamentals derive the mass momentum and energy equations for an infinitesimal control volume. What are the assumptions made ?

OR