

B.TECH. DEGREE EXAMINATION, DECEMBER 2012**Third Semester**

Branch : Electrical and Electronics Engineering

EE 010 306—MECHANICAL TECHNOLOGY (EE)

(New Scheme—Regular/Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.***Part A***Each question carries 3 marks.*

1. Define the term radius of gyration of a floating body.
2. Explain the significances of critical Reynolds number.
3. What do you mean by reaction turbines ?
4. Define the term NPSH (Not Positive Suction Head).
5. What are the functions of air vessels in reciprocating pumps ?

(5 × 3 = 15 marks)

Part B*Each question carries 5 marks.*

6. How Pitot tubes are used in velocity measurements ?
7. Explain the working of rotameters in flow measurements.
8. With sketches, explain the effects of discharge and pressure when centrifugal pumps are connected in series and parallel.
9. Draw the different types of draft tubes. What are the effects of draft tube in reaction turbines ?
10. What is mean by cavitation in fluid machines ? How the cavitational effects can be reduced ?

(5 × 5 = 25 marks)

Part C*Each question carries 12 marks.*

11. Explain the various types of pressure measuring devices.

Or

12. Write notes on (a) Surface tension ; (b) Dynamic viscosity ; (c) Bulk modulus.
13. With a neat sketch, explain the working of Kaplan turbine.

Or

14. Explain the constructional details of a governor in a Francis turbine.

Turn over