



Reg. No. :

Name :

**Combined First and Second Semester B.Tech. Degree
Examination, April 2013
(2008 Scheme)**

08-107 – BASIC MECHANICAL ENGINEERING

Time: 3 Hours

Max. Marks : 100

Instruction : Answer **all** questions of Part – **A** and **two** questions from **each** Module of Part – **B**.

PART – A



(4×10)

1. Differentiate between Heat and Work.
2. State and explain Zeroth law of thermodynamics.
3. Sketch Otto cycle on a P-V and T-S diagram.
4. What is priming ?
5. What are the advantages of two stroke cycle engines ?
6. Sketch a block diagram of the air intake system of a petrol engine.
7. List the fields of application of Air Compressor.
8. What are the advantages and disadvantages of chain drives ?
9. Briefly describe Rolling process.
10. Explain the principle of operation of CNC machine.

**PART – B****Module – I**

11. Sketch the P-V and T-S diagram of Diesel Cycle and derive an expression for air standard efficiency.
12. Explain the working of a 4-stroke Diesel engine with the help of suitable sketches.
13. With a neat sketch, explain the working of a Cochran boiler.

Module – II

14. With the help of a suitable sketch, explain the working of a reciprocating type air compressor.
15. Sketch the layout of a thermal power plant and explain the functions of various components.
16. Explain the working of a vapour compression system.

Module – III

17. Explain the working of a single plate clutch with a suitable sketch.
18. Describe the following production process (i) Welding (ii) Casting.
19. Describe how taper turning is done in a lathe.