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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.

**P.T.O.**

**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.
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