

**A 12**

**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No: 121ME04**

**B. TECH. I – Year II – Semester Examinations, July, 2014 (Regular)**

**BASIC MECHANICAL ENGINEERING (Common to CSE and IT)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part-A**

**Max.Marks:20**

**Answer all QUESTIONS.**

1. What are limitations of Carnot cycle for practical existence?

2. Write advantages of fire tube boilers.

3. Define COP and Ton of Refrigeration.

4. Write the classification of Hydraulic turbines.

5. What are the applications of Die casting process?

6. List applications of rolling process in steel industry.

7. What are the various lubrication systems adopted for two wheelers?

8. Compare reciprocating pumps with centrifugal pumps.

9. List different operations that can be carried out on a typical Lathe machine

10.During a cycle there are four non flow processes. the heat transfers during these processes are

a) +16 kJ,-5 kJ,- 8kJ, 3 kJ and b) +46kJ, -31kJ, -26kJ, +11kJ. Determine the net work done for the cycle (a) and cycle (b).

**Part – B**

**Max. Marks: 50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. a) Explain the Kelvin plank and Clausius statement (4M)

b) Describe the working of Two stroke petrol engine with a neat sketch. (6M)

2. a) Describe the working of Benson boiler with a neat sketch. (6M)

b) What are the methods of improving the thermal efficiency of open cycle gas turbine power plant and explain any two of them? (4M)

3. a) Describe the working of Vapour compression refrigeration system

b) Explain winter air conditioning system with a neat sketch

4. a) Explain the working of a Francis turbine

b) Compare Impulse turbines with reaction turbines

5. Describe the working of Gas welding process and sketch different flames involved in the process and list applications of it.

6. a) Sketch any one grinding machine and explain its working . (6M)

b) Describe any one Press working operations (4M)

7. a) Derive the expression for Otto Cycle in air standard cycles.

b) What is the difference between SI & CI Engine?

8 a)Sketch the layout of Hydroelectric power plant

b) Explain the working principle of centrifugal pump

**-- 00 -- 00 --**