ROLL NO:	

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF ENGINEERING

Weightage: 20 % Max Marks: 40 Max Time: 1 hr. Monday, 24 September, 2018

TEST – 1

Odd Semester 2018-19 Course: **MEC 101 Elements of Mechanical Engineering.** I Sem Chemisitry Cycle

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Instruction:

(i) Read the question properly and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and Non-programmable calculators are permitted.

Part A

(3 Q x 4 M = 12 Marks)

1. Differentiate between renewable and non-renewable sources of energy.
2. Define energy, work, power and pressure and mention their units.
3. Draw a proper diagram indicating atmospheric, gauge, vacuum and absolute pressure and show the relationship between them

Part B

(2 Q x 8 M = 16 Marks)

4. State Zeroth law, First law, Second law and Third Law of thermodynamics.
5. Give any four differences between fire tube and water tube boilers.

Part C

(1 Q x 12 M = 12 Marks)

6. Explain the working of Babcock and Wilcox Boiler with a neat diagram.

   Write the advantages and disadvantages of water tube boilers over fire tube boilers.

ROLL NO:

PRESIDENCY UNIVERSITY, BENGALURU

SCHOOL OF ENGINEERING

TEST 2

Odd Semester: 2018-19 | **Date**: 27 November 2018

Course Code: MEC 101 | **Time**: 1 Hour

Course Name: Elements of Mechanical Engineering | **Max Marks**: 40

Branch & Sem: Chemistry Cycle & I Sem | **Weightage**: 20%

Instructions:

(i) Read the question properly and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and Non-programmable calculators are permitted

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (4x4=16)

1. Differentiate between open cycle & closed cycle gas turbine.
2. State difference between 4 stroke petrol & diesel engines.
3. With reference to Impulse & Reaction Steam Turbine, State any four differences.
4. Define one Ton of Refrigeration and C.O.P of Refrigeration System.

Part B

Compulsory question carries **eight** marks. (1x8=8)

5. Draw neat sketches and explain the working principle of Reaction Turbine and also draw its P-v diagram.

Part C

Answer both the Questions. Each carries **eight** marks. (2x8=16)

6. Explain the working of a 4-stroke CI engine with a neat sketch & draw P-v diagram with processes.
7. A 4-stroke engine has a piston diameter 0.25 m and stroke 0.4 m. The mean effective pressure is 4 bar and speed is 500 rpm. The diameter of the brake drum is 1 m and the effective brake load is 400N. Find the indicated power, brake power and friction power.

Roll No.											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING — SET A

END TERM FINAL EXAMINATION

Odd Semester: 2018-19 | **Date**: 09 January 2019

Course Code: MEC 101 | **Time**: 2 Hours

Course Name: Elements of Mechanical Engineering | **Max Marks**: 80

Programme & Sem: B.Tech (Chemistry Cycle) & I Sem | **Weightage**: 40%

Instructions:

(i) Read the question properly and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (4Qx4M=16)

1. Define milling and name the different milling operations.
2. Draw the diagram of arc welding apparatus by labelling all the parts.
3. Differentiate between brazing and soldering.
4. Differentiate between open and closed belt drives.

Part B

Answer **all** the Questions. **Each** question carries **eight** marks. (5Qx8M=40)

5. Explain any two operations that can be done in a drilling machine with neat sketches.
6. Give the classification of welding and Explain oxy acetylene welding with a sketch.
7. Explain any four types of gears with neat sketches for each.
8. Explain the terminologies of a belt drive with a neat sketch.
9. Give atleast eight differences between Vapor Absorption Refrigeration system and Vapor Compression Refrigeration system.

Part C

Answer **both** the Questions. **Each** question carries **twelve** marks. (2Qx12M=24)

10. Draw the lathe machine and explain the main parts in detail.
11. Explain working of Vapor absorption refrigeration system with neat diagram.

Roll No.											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING — SET B

END TERM FINAL EXAMINATION

Odd Semester: 2018-19 | **Date**: 09 January 2019

Course Code: MEC 101 | **Time**: 2 Hours

Course Name: Elements of Mechanical Engineering | **Max Marks**: 80

Programme & Sem: B.Tech (Chemistry Cycle) & I Sem | **Weightage**: 40%

Instructions:

(i) Read the question properly and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (4Qx4M=16)

1. List 8 properties of Refrigerants.
2. Differentiate Between open Belt & Cross (Close) Belt Drives.
3. What is drilling? List the different operations performed on drilling machine.
4. Define Welding and Brazing.

Part B

Answer **all** the Questions. **Each** question carries **eight** marks. (5Qx8M=40)

5. List the difference between welding and soldering/brazing.
6. With neat sketch explain slot milling, end milling and plain milling.
7. Define and explain the following machining operations (as done on a lathe) with neat labeled sketches. a) Turning; b) Facing; c) Knurling
8. With neat sketch, explain the working of Vapour Compression Refrigeration system.
9. List the advantages and disadvantages of a chain drive.

Part C

Answer **both** the Questions. **Each** question carries **twelve** marks. (2Qx12M=24)

10. With neat sketch explain the gear nomenclature.
11. Explain with neat sketch of a Room Air conditioning system.