



Regulation R18

Subject code: 2B2AE

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B. Tech II Semester Supplementary Examinations, September 2023

FUNDAMENTALS OF MECHANICAL ENGINEERING

(Common to CE & ME)

Maximum Marks: 70

Date: 16.09.2023 Duration: 3 Hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 List out different sources of energy.
- 2 How would you define specific heat.
- 3 What do you remember about steam formation.
- 4 How would you explain functioning of steam boiler.
- 5 Write the efficiency of Otto cycle.
- 6 What is Dryness Fraction of steam?
- 7 What is adiabatic process and polytropic process?
- 8 Define steam boiler?
- 9 Define Specific Volume?
- 10 What is clutch ?

Part-B

Answer All the following questions.

(5X10M=50 Marks)

- 11 Show that for a constant pressure process, heat supplied to gas is equal to change of enthalpy. [10]
OR
- 12 Find the steady flow energy equation. [10]
- 13 Derive the equations of boyle's law. [10]
OR
- 14 Derive the equations of charle's law. [10]
- 15 Describe the process formation of steam from ice at 0°C and what is meant by internal energy of steam. [10]
OR
- 16 Differences between petrol engine and diesel engine. [10]
- 17 Explain the principle of fire tube and water tube boilers. [10]
OR
- 18 Describe construction and working of locomotive boiler. [10]
- 19 Describe the various classifications of engineering materials and its applications. [10]
OR
- 20 Define clutches. Explain anyone in detail. [10]