MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM – 686 666.

(Govt. Aided Autonomous institution)

DEPARTMENT OF MECHANICAL ENGINEERING

FIRST SESSIONAL EXAMINATION, OCTOBER 2025
S1 MECHANICAL – A & B BATCH

B24ES1T05B BASIC MECHANICAL ENGINEERING

Time – 45 Minutes **Max: 20 Marks**

PART-A

Answer All Questions.

1	How much heat will be necessary to raise the temperature of 1.5 kg of a gas from 90^0C to 225^0C, the volume remaining constant during the heat supply. Specific heat of gas at constant volume may be taken as 0.718kJ/kgK.	**CO 4**	**3 Marks**
2	Draw the PV and TS diagram of an Otto cycle and explain the process.	**CO 4**	**3 Marks**

PART - B

Answer All Questions.

3	Explain the working of a 4-stroke Diesel Engine with neat sketch.	**CO 4**	**14 Marks**

Vision

Mentoring to Ensure Excellence

Mission

- To Facilitate comprehensive and integrated devlopement of students by providing quality education that encourages sustainable practices
- To mould disciplined and socailly committed engineers capable of assuming professional leadership upholding national integrity.