



Department of Mechanical Engineering
Internal Assessment Question paper – II

Programme : UG

Course: Introduction to Mechanical Engineering

CIE: Test I

Sem: II

Time: 1Hr

Instructions to candidates

Portions for Test: Unit 3 and 4 as per the syllabus

Term: 01-06-23 to 09-09-23

Course Code: ESC234

Max Marks: 30

Answer any 2 full questions.

SL No.	Question	Marks	CO'S	Blooms Level
1	a) Explain with a neat sketch, the working of four stroke Diesel engine.	08	CO3	L2
	b) The following data is collected from a four stroke, single cylinder oil engine. Bore 200 mm, stroke 280 mm, speed 300 rpm, indicated mean effective pressure 5.6 bar, torque on the brake drum 250 N-m, oil consumed 4.2 kg/hr, calorific value of oil used 41000 kJ/kg. Determine the mechanical efficiency, indicated thermal efficiency and brake thermal efficiency.	07	CO3	L5
2	a) What is refrigeration? What are its applications?	04	CO3	L2
	b) Draw the neat sketch and label the parts of a typical room air conditioner.	04	CO3	L2
	c) A compound gear train consists of 4 gears A, B, C and D and they have 20, 30, 40 and 60 teeth respectively. Gear A is keyed to the driving shaft and D is keyed to the driven shaft. B and C are compound gears. B meshes with A and C meshes with D. Show the arrangement of gears. If A rotates at 180 rpm, find the speed of gear D.	07	CO4	L2
3	a) Derive an expression for length of the belt in an open belt drive system.	08	CO4	L2
	b) Explain with a sketch, the arc welding process.	07	CO4	L2