CAMBRIDGE INSTITUTE OF TECHNOLOGY
K.R. PURAM, BENGALURU-560036

Department of Basic Sciences

First Internal Assessment - Even Semester 2018-19

Sub. Name: Elements of Mechanical Engineering **Sub. Code**: 18ME25 **Semester**: II

Date: 02-04-2019 **Time**: 2:30 PM **Duration**: 90 Minutes **Max. Marks**: 30

[Instructions: Answer any two full questions as indicated below]

Sl. No.	QUESTIONS	COs	RBT Levels	Marks
1.	a) List the parts of IC Engine.	CO2	L1	02M
	b) Explain, with a neat sketch, the working of a 2-stroke Petrol engine.	CO2	L2	05M
	c) The following observations were obtained during a trial on a 4-stroke diesel engine. Cylinder diameter = 25 cm, stroke of the piston = 40 cm, crankshaft speed = 250 rpm, Brake load = 70 kg, brake drum diameter = 2 m, Mean Effective Pressure = 6 bar, Diesel oil consumption = 0.1 m^3/min, Specific gravity of diesel = 0.78, Calorific value of diesel = 43,900 kJ/kg. Determine: (i) brake power, (ii) indicated power, (iii) friction power, (iv) mechanical efficiency, (v) brake thermal efficiency and (vi) indicated thermal efficiency.	CO2	L2	08M
	OR			
2.	a) Define Ton of Refrigeration and Refrigeration effect.	CO2	L1	02M
	b) Explain, with a neat sketch, the working of vapour absorption refrigeration system.	CO2	L2	05M
	c) Explain, with a neat sketch, the working of room air conditioning system.	CO2	L2	08M
3.	a) What are reaction turbines?	CO2	L1	02M
	b) Explain the working principle of Kaplan turbine.	CO2	L2	05M
	c) ~~What are reaction turbines.~~ Explain, with a neat sketch, boiler mountings.	CO1	L2	08M
	OR			
4.	a) Define boiler and steam.	CO2	L1	02M
	b) Explain the working principle of reaction turbine.	CO2	L2	05M
	c) Explain, with a neat sketch, the water tube boiler.	CO1	L2	08M

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