

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B. Tech. Mid Semester Exam

Semester: 6TH

Subject Code: 203102387

Subject Name: Combustion & Emission Technology

Date: 02/02/2024

Time: 02:30 to 04:00

Total Marks: 40

Sr.No.		Marks
Q.1	A.	05
	1) Write the full form of DISC Engine. – Direct Injection Stratified Charge Engine	
	2) Define: Volumetric Efficiency - Volumetric efficiency in internal combustion engine engineering is defined as the ratio of the mass density of the air-fuel mixture drawn into the cylinder at atmospheric pressure to the mass density of the same volume of air in the intake manifold.	
	3) What is Engine Downsizing? - As downsizing retains performance whilst reducing the size of the engine, it increases the power density.	
	4) Define: Swirl - Swirl is usually defined as organized rotation of the charge about the cylinder axis.	
	5) Define: Brake Power - The brake power (briefly written as B.P.) of an IC Engine is the power available at the crankshaft.	
	B.	05
	1) When Piston reached at TDC at that time the volume between Piston top and the Cylinder head is called Compression Ratio. True/ False - False	
	2) The Four Stroke cycle one cycle of operation in _____ crank angle degrees. (360, 720)	
	3) What is the full form of DOHC? – Double Overhead Cam Shaft	
	4) In _____ combustion method the layer of fuel occurs on the wall of cylinder. (Wall Guided, Air Guided)	
	5) In V – Twin engines _____ crankshaft will be used. (One, Two)	
Q.2	Attempt any four(Short Questions)	12
	1) Define Charge Stratification and Write the requirement of DISC Engine.	
	2) Describe the comparison of Single Hole Nozzle, Swirl Nozzle and Circumferential Orifice Nozzle.	
	3) Enlist the different Engine Configurations and explain V-type Engines.	
	4) Enlist the problems associated with turbocharging in SI Engine. Explain any one of them.	
	5) Write down Short note on GDI Engine.	
Q.3	Attempt any two questions	08
	1) Write down brief classification of engines.	
	2) Describe Knocking Phenomena in detail with neat sketch.	
	3) Write Down the general Design Considerations of I.C. Engine.	
Q.4	A. Describe Wall Guided Combustion System in details.	05
	B. Write down the function of following components. Cam Shaft, Crank Shaft, Flywheel, Fuel Injector, Spark Plug	05
	OR	
	B. Define: concept of downsizing and also list out the basic techniques used for downsizing process.	05