Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER- VII EXAMINATION-SUMMER 2023

Subject Code: 3171923 Date: 19/06/2023

Subject Name: Internal Combustion Engine

Time: 10:30 AM TO 01:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Give classification of I.C.Engine in detail.	**03**
	(b)	Explain compression ratio and clearance volume.	**04**
	(c)	Explain working of a four-stroke petrol engine.	**07**
Q.2	**(a)**	Explain ignition limit and stochiometric mixture.	**03**
	(b)	Explain factors affects the process of carburation.	**04**
	(c)	Explain the fuel supply system in petrol engine.	**07**
		OR	
	(c)	Explain the fuel supply system in diesel engine.	**07**
Q.3	**(a)**	What do you mean by detonation?	**03**
	(b)	Briefly explain stages of combustion in S.I,Engine	**04**
	(c)	Compare supercharging and turbocharging.	**07**
		OR	
Q.3	**(a)**	Explain supercharging of C.I.Engine.	**03**
	(b)	Briefly explain stages of combustion in C.I.Engine.	**04**
	(c)	State the different methods of supercharging & discuss one of them.	**07**
Q.4	**(a)**	Define A:F ratio and discuss its importance.	**03**
	(b)	What are the different parameters considered to control knock?	**04**
	(c)	List different types of S.I.Engines combustion chamber.	**07**
		OR	
Q.4	**(a)**	Explain induction swirl and compression swirl.	**03**
	(b)	Discuss heat balance sheet.	**04**
	(c)	Evaluate “Turbulence” is required in S.I.Engine and “Swirl” is required in diesel engine.	**07**
Q.5	**(a)**	Explain different types of emission from automobile.	**03**
	(b)	Explain MPFI engine.	**04**
	(c)	Carried out by mass analysis of carbon in case of complete combustion.	**07**
		OR	
Q.5	**(a)**	Briefly explain Bharat Stage.	**03**
	(b)	What do you mean by EGR (Exhaust Gas Recirculation.	**04**
	(c)	Carried out by mass analysis of carbon in case of incomplete combustion.	**07**

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