

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V(NEW) EXAMINATION – SUMMER 2022

Subject Code:3152009

Date:13/06/2022

Subject Name:Automobile Engineering

Time:02:30 PM TO 05:00 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.

		MARKS
Q.1	(a) Draw any two vehicle layouts in Automobile.	03
	(b) Explain functions, types, and different components of chassis frame.	04
	(c) Explain with figure construction and working of a fluid flywheel.	07
Q.2	(a) Point out need of clutch in the automobile.	03
	(b) Give comparison of front wheel drive and rear wheel drive in front engine mounted chassis	04
	(c) Explain with figure construction and working of multi plate clutch.	07
OR		
	(c) Explain the working of single plate clutch with the help of simple diagram	07
Q.3	(a) What is free pedal play and why it is required?	03
	(b) Differentiate the functions of a spring and a shock absorber.	04
	(c) Classify the gearbox and explain constant mesh gear box with figure.	07
OR		
Q.3	(a) What is the function of propeller shaft? Also draw its figure.	03
	(b) What are the functions of steering in an automobile?	04
	(c) Explain the working of Automatic transmission gear box.	07
Q.4	(a) State principle and requirements of automotive brakes.	03
	(b) Explain the transmission system in a vehicle with sketch.	04
	(c) Explain Wishbone type suspension system.	07
OR		
Q.4	(a) Define following terms w.r.t to steering geometry: 1. Castor angle 2. Camber angle 3. Toe-in	03
	(b) Differentiate under steer and over steer with neat sketch.	04
	(c) Write a short note on vehicle aerodynamics.	07
Q.5	(a) Give the functions of (1) propeller shaft and (2) universal joint.	03
	(b) State objectives of vehicle suspension.	04
	(c) Write short note on factors affecting tyre wear.	07

OR

- Q.5**
- (a)** Name the different electrical and electronics components used in vehicle with its symbols. **03**
 - (b)** Explain 1. Fading of Brakes 2. Wheel skidding **04**
 - (c)** Explain construction and working of hybrid car with neat diagram. **07**
