

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2021****Subject Code:2150202****Date:17/09/2021****Subject Name:Automobile Systems****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.

		MARKS
Q.1	(a) Draw four-wheel drive layout along with nomenclature of components.	03
	(b) Name major components of transmission line along with functions of each	04
	(c) With the help of neat sketch explain Front Engine Rear Wheel Drive layout	07
Q.2	(a) List down various types of materials used for vehicle frame construction	03
	(b) Explain Ladder frame with neat sketch	04
	(c) Explain construction and working of Mac-Pherson Strut type Independent suspension in detail with neat sketch.	07
OR		
	(c) Explain construction and working of Ackermann steering system with sketch	07
Q.3	(a) Draw the diagram of Leaf spring along with nomenclature of its various parts.	03
	(b) Explain Air suspension with neat sketch	04
	(c) Explain the construction and working of Fluid flywheel with neat sketch	07
OR		
Q.3	(a) Write a short note on Brake Oil	03
	(b) Explain brake bleeding process in detail with neat sketch	04
	(c) Describe working and construction of Electrical brakes with diagram	07
Q.4	(a) Draw the diagram of Torque converter along with nomenclature of various components	03
	(b) Differentiate between Manual and Automatic Transmission	04
	(c) Explain working and construction of CVT with neat sketch	07
OR		
Q.4	(a) Define Toe, Camber, Caster	03
	(b) Explain understeer and Oversteer with neat diagrams	04
	(c) Explain construction and working of Power steering system with neat sketch	07
Q.5	(a) Explain Grade resistance with diagram and its equation	03
	(b) Write a short note on propeller shaft with neat sketch	04
	(c) Explain working and construction of differential with neat diagram	07
OR		
Q.5	(a) Explain tyre specification with suitable example	03
	(b) Explain various types of wheel rims with neat diagram	04
	(c) Describe various types of tread patterns available on the tyres	07
