Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022

Subject Code:3161920   **Date:10/06/2022**

Subject Name:Automobile Engineering

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)	What is automotive system? Classified the vehicle with respect its body types.	03
	(b)	Explain function of frame	04
	(c)	List the different component which included in chassis. Classify the chassis and explain functions of chassis.	07
Q.2	(a)	Analyze the selection of body member cross sections.	03
	(b)	Discuss three types of resistances acting on Automobile vehicles.	04
	(c)	Draw the Four-wheel drive vehicle layout. State three advantages and three disadvantages of it.	07
		OR	
	(c)	Write a short note on vehicle aerodynamics.	07
Q.3	(a)	List advantages and disadvantages of telescopic shock absorber.	03
	(b)	Compare Drum and Disc types of brakes.	04
	(c)	Describe the construction and explain working of Ackermann steering mechanism with a neat sketch	07
		OR	
Q.3	(a)	Compare Hotchkiss drive with Torque tube drive.	03
	(b)	What is the function of propeller shaft? Also draw its figure.	04
	(c)	Explain the necessity of a differential in an automobile. Discuss in detail the construction and operation of the differential.	07
Q.4	(a)	State the necessity of transmission in an Automobile vehicle	03
	(b)	Describe the construction of Leaf spring suspension system with neat sketch.	04
	(c)	Explain with a neat sketch the working of a Synchromesh mesh type gear box used in automobiles.	07
		OR	
Q.4	(a)	How automatic transmission works?	03
	(b)	Explain the working of power steering	04
	(c)	Describe construction and explain working of centrifugal clutch with neat sketch.	07
Q.5	(a)	Define Braking Distance, Braking Efficiency, Slip Ratio.	03
	(b)	List any four types of lights used in modern vehicle and state their purpose	04
	(c)	What is ABS? List different components of ABS and explain ABS with neat sketch.	07

OR

Q.5	**(a)**	Explain tire designation.	**03**
	(b)	List any four types of electronic components of vehicle and state their use.	**04**
	(c)	Draw lighting circuit with all nomenclature and explain its components.	**07**

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