

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020****Subject Code:3152009****Date:03/02/2021****Subject Name:Automobile Engineering****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

	Marks
Q.1 (a) Define (1) Camber (2) Caster (3) Toe	03
(b) Explain function of frame.	04
(c) Explain the working of a single plate clutch with the help of a simple diagram.	07
Q.2 (a) Compare S.I. engines with C.I engines.	03
(b) Give the various types and applications of lubrication and cooling system in I.C.engine.	04
(c) State the different methods of supercharging and discuss any one of them with figure.	07
Q.3 (a) Give classification of suspension system.	03
(b) What are the functions of the following accessories?	04
i) Mirror	
ii) Odometer	
iii) Sun visors	
iv) Speedometer	
v) Windscreen wiper	
vi) Fuel Gauge	
(c) Explain principle of starting motor used in automobile.	07
Q.4 (a) State principle and requirements of automotive brakes.	03
(b) Explain starting system with neat sketch	04
(c) Explain stages of combustion in C.I. engines.	07
Q.5 (a) Explain rolling resistance, gradient resistance, and wind resistance.	03
(b) List any four types of electronic components of vehicle and state their use.	04
(c) Explain Ackermann steering mechanism.	07
Q.6 (a) Draw any two vehicle layouts in Automobile.	03
(b) Explain battery charging system.	04
(c) Which are the checking to be done during daily, weekly and monthly maintenance of a vehicle ? Discuss in brief.	07
Q.7 (a) Define the terms:	03
(i) Mechanical efficiency	
(ii) Indicated and Brake Power	
(iii) specific fuel consumption	
(b) Write about hybrid vehicle and concept car.	04

- (c) Explain with a neat sketch the working of a Synchromesh mesh type gear box used in automobiles. **07**
- Q.8** (a) Point out need of clutch in the automobile. **03**
- (b) What is meant by maintenance? Explain different types of maintenance. **04**
- (c) Write short note on (i) Electric car (ii) Hybrid car **07**