

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VI (NEW) EXAMINATION – WINTER 2021****Subject Code:3160209****Date:24/11/2021****Subject Name:Automotive Electricals and Electronics****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) Explain Circuit Breakers. **03**
- (b) Explain Storage, Distribution Systems & Generation of Electrical Energy. **04**
- (c) Explain Designation & Rating of Batteries. **07**
- Q.2** (a) Explain the Construction of Commutator. **03**
- (b) Explain Cutout Relay. **04**
- (c) Explain Principle, Construction & Working of Lead Acid Battery. **07**
- OR**
- (c) Explain Different Types of Battery Charging Technic. **07**
- Q.3** (a) State Various Types of Horns. Explain Double Diaphragm Type Electric Horn. **03**
- (b) Compare AC Generator with DC Generator. **04**
- (c) Explain Bendix Drive Mechanism of Starting System of Automobile. **07**
- OR**
- Q.3** (a) Write Short note on Wind Screen Wipers. **03**
- (b) Explain Spark Advance Mechanism and Cam Angle in Ignition System. **04**
- (c) Discuss in detail the following: **07**
- (i) Fuel Gauges (ii) Oil Temperature Gauge.
- Q.4** (a) Explain Ignition Coil Tester. **03**
- (b) Explain Air Conditioning System of Automobile. **04**
- (c) How On Board Diagnostic Systems in Automobile works? Compare OBD I with OBD II. **07**
- OR**
- Q.4** (a) Classify Automobile Wiring Cables based on Colour Coding. **03**
- (b) Explain Oxygen Sensors. **04**
- (c) Explain in detail Electronic Power Steering of Today's Automobile. **07**
- Q.5** (a) Define (i) Engine Breakaway Torque (ii) Engine Resisting Torque (iii) Motor Locked Torque. **03**
- (b) Describe Crank Angle Position Sensors with Neat Sketch. **04**

- (c) Give Desirable Characteristics of an ideal Spark Plug. Explain with the help of a neat Sketch the Construction details of Spark Plug. **07**

OR

- Q.5** (a) Explain Central Locking System. **03**
(b) Explain Cam angle RPM Testers used as Testing Devices in Vehicles. **04**
(c) Explain Combined Current – Voltage Regulator with neat circuit diagram. **07**
