

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160209****Date:01/06/2022****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.

MARKS

- Q.1** (a) Draw and explain the working of simple circuit breaker in short. **03**
 (b) Enlist the color codes and its indications used for wiring in vehicle. **04**
 (c) Explain the constructional details of Lead acid battery in details with neat sketch. **07**

- Q.2** (a) Give the function of the following: **03**
 (i) Relay circuit
 (ii) Switches
 (iii) Fuse
 (b) Explain the construction and working of cutout relay with sketch. **04**
 (c) Explain the various methods of battery capacity rating. **07**

OR

- (c) Enlist the various battery failures and their possible causes and remedies. **07**

- Q.3** (a) Explain working of glow plug and choke in brief. **03**
 (b) Explain the construction and working of overrunning clutch. **04**
 (c) Explain the Bendix drive type starting mechanism in details with neat sketch. **07**

OR

- Q.3** (a) Explain the hydrometer test for battery in short. **03**
 (b) Explain any two battery charging methods in short. **04**
 (c) Explain the current voltage regulator for charging system in detail with neat sketch. **07**

- Q.4** (a) Enlist any three faults in charging system and their possible causes. **03**
 (b) Explain the working of the fog lamp in short. **04**
 (c) Draw the wiring diagram of flashing type side indicator and explain its working. **07**

OR

- Q.4** (a) Explain the working of oil pressure warning light. **03**
 (b) Explain the working of On Board Diagnostic (OBD) in short. **04**
 (c) Explain the Electronic MPFI system used in vehicle in detail. **07**

- Q.5** (a) Explain the working of balancing type fuel gauge. **03**
 (b) Explain the effect of interference suppression on vehicle engine in short. **04**
 (c) Explain the working principle of oxygen sensor used in vehicle with neat sketch. **07**

OR

- Q.5** (a) Explain the working of speedometer in short. **03**
 (b) Explain any one type of throttle position sensor in brief. **04**
 (c) Explain the construction and working of electric horn used in vehicles. **07**
