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## **GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VIII EXAMINATION - SUMMER 2016**

Subject Code:180202 Date:05/05/2016

Subject Name: Automotive Electrical & 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.
- 0.1 (a) Give classification of automotive electrical system and explain generation, 07 storage and distribution system in brief. Explain various battery tests. 07 **(b)**
- 07 0.2 Discuss the principle of operation of a Lead acid battery. (a)
  - Enlist various cranking motor drive mechanisms. Explain operation of Bendix 07 **(b)** drive with neat sketch.

### OR

- (b) Draw a simple circuit diagram of the coil ignition system and explain it in brief. 07
- Explain the working of a combined current voltage regulator with a neat wiring Q.3 07 **(a)** diagram.
  - (b) Give desirable characteristics of an ideal spark plug. Explain with the help of a 07 neat sketch the construction details of a spark plug.

#### OR

- **Q.3** Explain working of distributors with magnetic pick-up with the help of a simple 07 **(a)** wiring diagram.
  - **(b)** Describe with a neat diagram the Autronic eve. 07
- Based on colour coding classify automobile wiring cables. 07 0.4 (a)
  - **(b)** What is the necessity of air-conditioning in automobiles? Explain with neat 07 sketch solid state refrigerator used in automobiles.

#### OR

- Name various types of speedometers. Describe working of an electrical 07 **O.4** (a) speedometer with neat sketch. (b) Explain in brief battery tester and condenser tester. 07 Q.5 Explain in brief: (i) Fog lamps & (ii) Brake warning lights. 07 (a) **(b)** Write a short note on Electric Horns. 07 OR 0.5 (a) Explain the following: 07 1. Positive and Negative Earthing 2. Earthed and Insulated Returns systems 07
  - (b) Write a short note on Battery ratings and battery capacity.

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