

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER– VI EXAMINATION – SUMMER 2026

Subject Code:3160214

Date:26-05-2026

Subject Name:Vehicle Testing and Homologation

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) Define & explain vehicle testing and homologation need. **03**
(b) Explain types of vehicle inspections. **04**
(c) Explain testing standards like; AIS testing standards, Euro Standards, SAE standards. **07**

- Q.2** (a) Define Noise, Vibration and Harshness. **03**
(b) Write short note on side slip tester. **04**
(c) Classify various noise emits from the engine with reasons. **07**

OR

- (c) Classify dynamometer. Explain hydraulic dynamometer with sketch. **07**

- Q.3** (a) Explain Steering Impact test. **03**
(b) Describe dynamic wheel balancing. **04**
(c) Explain Gas Chromatography and Smoke meters. **07**

OR

- Q.3** (a) What does it mean by: 1) Squeak, 2) Buzz, 3) Rattle noise. **03**
(b) Write Measurement of BHP, IHP, BSFC, Thermal Efficiency of IC engine with proper notation. **04**
(c) What is FIP calibrating? Explain FIP calibrating testing. **07**

- Q.4** (a) Give the full form of following terms: 1) CMVR, 2) ARAI, 3) NATRiP. **03**
(b) Write short note on Turning circle diameter test. **04**
(c) Explain Standard noise measurement methods. **07**

OR

- Q.4** (a) Demonstrate gradability test. **03**
(b) Explain headlight beam alignment testing. **04**
(c) What is Emission test ? Explain Emission test for CO and HC. **07**

- Q.5** (a) Explain Brake stopping distance. **03**
(b) Describe measurement of IHP. **04**
(c) Explain testing standards like; AIS testing standards, Euro Standards, SAE standards. **07**

OR

- Q.5** (a) What is the function of Vehicle Test lane for laboratory testing of vehicle. **03**
(b) What are the types of approval? **04**
(c) Explain vehicle's wheel rim test for cornering and radial fatigue with sketch. **07**