

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160214****Date:06/06/2022****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) What is homologation? Justify the need of automotive homologation. **03**
(b) Define Category M and Category N vehicle as per IS and AIS standard? **04**
(c) Which are the good habits of driving, the driver should have? Explain it detail. **07**
- Q.2** (a) Define: (1) Dynamometer (2) Brake Power (3) Flue Gases **03**
(b) Describe measurement of IHP. **04**
(c) Classify dynamometer. Explain hydraulic dynamometer with sketch. **07**
- OR**
- (c) Explain construction and working of ORSAT apparatus method with neat sketch **07**
- Q.3** (a) Explain fundamental of acoustic. **03**
(b) Illustrate pass by noise test. **04**
(c) Explain various sources of noises in an automobile vehicle. **07**
- OR**
- Q.3** (a) Differentiate active safety and passive safety. **03**
(b) Explain effect of noises on human being. **04**
(c) Explain four wheel alignment testing procedure. **07**
- Q.4** (a) Demonstrate gradability test. **03**
(b) What is Turning radius? Explain turning circle diameter test. **04**
(c) Explain steering effort test. **07**
- OR**
- Q.4** (a) Write short note on side slip tester. **03**
(b) Describe dynamic wheel balancing. **04**
(c) Explain four wheel chassis dynamometer with neat sketch. **07**
- Q.5** (a) What do you mean by EURO standards and AIS standards? **03**
(b) Explain ISO 26262 standards for functional safety of electrical and/or electronic systems in automobiles. **04**
(c) Explain SHED test on chassis dynamometer. **07**
- OR**
- Q.5** (a) Explain SAE standard. **03**
(b) Explain headlight beam alignment testing. **04**
(c) Explain in brief: AIS – 038 standards. **07**
