

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E Sem-II Examination July 2010****Subject code: 721101****Subject Name: Instrumentation & Vehicle Testing****Date: 05/ 07 /2010****Time: 11.00am – 1.30pm****Total Marks: 60****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain PUC test for an automobile vehicle. **06**
(b) Explain EURO standards for automobiles. **06**

- Q.2** (a) Explain road test of an automobile. **06**
(b) Explain wheel alignment of an automobile. **06**

OR

- (b) Explain laboratory dynamometer testing systems of power train and vehicle under simulated conditions. **06**

- Q.3** (a) Enlist devices to measure temperature and pressure of air and fuel flow into the engine. Explain any one of them with neat sketch. **06**

- (b) Explain following term with example: **06**
(i) Precision
(ii) Accuracy
(iii) Sensitivity

OR

- Q.3** (a) Explain how to test an automobile engine as per I.S. codes. **06**
(b) Explain components of an analog data acquisition system. **06**

- Q.4** (a) Explain automobile wheel balancing. **06**
(b) Classify the methods used to measure vibrations and explain principle of any two. **06**

OR

- Q.4** (a) Explain piezoelectric pressure transducer with acceleration compensation with help of neat sketch. **06**
(b) Explain FFT analyzer in brief. **06**

- Q.5** (a) Explain black body fiber optic radiation pyrometer with neat sketch. **06**
(b) Explain foil type metal strain gauge used for pressure measurement with neat sketch. **06**

OR

- Q.5** (a) Write short note on brake actuation warning system. **06**
(b) Explain function of safety air bag in automobile. **06**
