

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VIII (New) EXAMINATION – WINTER 2019****Subject Code: 2181915****Date: 21/11/2019****Subject Name: Automobile Engineering****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

- Q.1** (a) With suitable example specify automobile vehicle. **03**
- (b) Classify Automobile vehicles based on any four criteria. **04**
- (c) List out the parts/systems connecting the Engine with the Driving wheels. State the function of each. **07**

- Q.2** (a) Discuss three types of resistances acting on Automobile vehicles. **03**
- (b) Analyze the selection of body member cross sections. **04**
- (c) Draw the Four wheel drive vehicle layout. State three advantages and three disadvantages of it. **07**

OR

- (c) Explain vehicle structure analysis by Simple Structural Surface (SSS) method. **07**

- Q.3** (a) State the necessity of transmission in an Automobile vehicle. **03**
- (b) Explain the working of power steering. **04**
- (c) Describe construction and explain working of centrifugal clutch with neat sketch. **07**

OR

- Q.3** (a) How automatic transmission works? **03**
- (b) Describe the construction of Leaf spring suspension system with neat sketch. **04**
- (c) Explain with a neat sketch the working of a Synchromesh mesh type gear box used in automobiles. **07**

- Q.4** (a) List advantages and disadvantages of telescopic shock absorber. **03**
- (b) Compare Drum and Disc types of brakes. **04**
- (c) Describe the construction and explain working of Ackermann steering mechanism with a neat sketch. **07**

OR

- Q.4** (a) State two ways to improve functionality of leaf spring. **03**
- (b) Distinguish between “semi-floating” and fully-floating” rear axles with the aid of suitable sketches. **04**
- (c) Explain the necessity of a differential in an automobile. Discuss in detail the construction and operation of the differential. **07**

- Q.5** (a) What are the functions of the following accessories? **03**
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i) Mirror
ii) Odometer
iii) Sun visors
iv) Speedometer
v) Windscreen wiper
vi) Fuel Gauge

(b) List any four types of lights used in modern vehicle and state their purpose. **04**

(c) Write short note on (i) Electric car (ii) Hybrid car **07**

OR

Q.5 (a) Write the name of any three types of indicators and state their use. **03**

(b) List any four types of electronic components of vehicle and state their use. **04**

(c) Draw a simplified wiring circuit for the lighting system of car. **07**

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