

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2150207****Date: 19/06/2019****Subject Name: Automobile Transmission****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) Explain various resistances to motion of a vehicle. **03**  
(b) Write brief note on two and four wheel drive systems. **04**  
(c) Explain typical Janny hydrostatic drive with sketch. **07**

- Q.2** (a) Explain principle of operation of clutch. **03**  
(b) Write difference between electric and hybrid drive system. **04**  
(c) With neat sketch explain fluid coupling. **07**

**OR**

- (c) With neat sketch explain torque convertor. **07**  
**Q.3** (a) Compare hydrostatic and hydrodynamic drive. **03**  
(b) Write the classification of transmission systems. **04**  
(c) Explain construction and working of transfer box with sketch. **07**

**OR**

- Q.3** (a) Discuss about requirements of clutch. **03**  
(b) Brief note on types of hydrostatic drive. **04**  
(c) Explain centrifugal clutch in detail with neat sketch. **07**  
**Q.4** (a) Write short note on determination of gear ratios for vehicles. **03**  
(b) Short note: Hybrid drive system. **04**  
(c) Discuss the principle of early and modified Ward Leonard Control system. **07**

**OR**

- Q.4** (a) Compare single plate clutch and multi plate clutch. **03**  
(b) Explain hydraulic mode of operation clutch with sketch. **04**  
(c) Explain hydraulic actuation system for automatic transmission with neat sketch. **07**  
**Q.5** (a) Define double declutching and synchronizing. **03**  
(b) Explain any four points of gear maintenance. **04**  
(c) With neat sketch explain construction and working of sliding-mesh gear box. **07**

**OR**

- Q.5** (a) Write requirements of clutch facing materials. **03**  
(b) Write short note on freewheel clutch. **04**  
(c) Explain clutch maintenance in detail. **07**

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