

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer-2019 Examination

Semester: 5
Subject Code: 03102302
Subject Name: Automobile Powertrains and Systems

Date: 17/05/2019
Time: 10:30am to 1:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat and clean diagram.
4. Start new question on new page.

Q.1 Objective Type Questions**(15)**

1. Give the full form of CVTs.
2. Define Caster Angle.
3. Define Camber Angle.
4. What is a Bleeding of Brake?
5. What is a Transaxle?
6. _____ drive vehicles have differential at both the front and rear wheels.
7. In the air brake, air pressure is supplied by a _____.
8. The kinetic energy due to motion of the vehicle is dissipated in the form of _____ energy due to friction between moving parts (wheel drum) and stationary parts of vehicle (brake shoes)
9. The clutch plate is hold in between _____ and pressure plate.
10. The power train includes the Engine, Flywheel, _____, transmission, propeller shaft, and differential.
11. Leaf springs absorb shocks by
 (A) bending (B) twisting (C) compression (D) tension
12. Checking Shock Absorber condition by bounce test, Push down on one corner of vehicle's body and release the body and count the number of times the vehicle rebounds.
 (A) Good – No more than two rebounds (B) Good - More than two rebound
 (C) None of the Above
13. Fluid travels either in a rotary or vortex motion
 (A) Vortex (B) Rotary (C) Both A & B
14. In the transmission the counter shaft driven gear is meshed with a gear on the
 (A) Main Shaft (B) Clutch Shaft (C) Ideal Shaft (D) Output Shaft
15. Which of the following is not a type of gearbox?
 (A) Linear mesh gearbox (B) Sliding mesh gearbox
 (C) Constant mesh gearbox (D) Synchromesh gearbox

Q.2 Answer the following questions. (Attempt any three)**(15)**

- A) Enlist the requirements of an Automobile Clutch.
- B) Enlist Types of bleeding procedure & Explain any one type of bleeding procedure.
- C) Differentiate Automatic transmission and Manual transmission.
- D) List out the Automobile layout, Describes where on the vehicle the Engine and drive wheels are found.

Q.3 A) Explain construction, working and arrangement of Sliding gearbox with the help of neat sketch.**(07)**

- B) Explain with neat sketch the rear axle shaft supporting of 1. Semi floating 2. full floating

(08)**OR**

- B) What is an independent suspension? Enlist basic classification of independent suspension and Explain the Macpherson strut type of independent suspension

(08)**Q.4 A) Write a short note on Torque converter with neat schematic diagram.****(07)****OR**

- A) With neat sketch explain multi coil spring single plate clutch.

(07)

- B) Explain with neat schematic diagram the anti-lock brake systems.

(08)