

TED (15) – 5052  
(REVISION — 2015)

Reg. No.....

Signature .....

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

**AUTOMOBILE TRANSMISSION**

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Name two types of springs fitted in clutch disc.
2. List two functions of gear box in vehicles.
3. Write the use of Universal Joint in propeller shaft.
4. Define the term "Aspect Ratio".
5. Name any two type rear axle support mechanisms.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. List 6 requirements of a Automobile clutch unit.
2. Discuss the working of Epicyclic gear arrangement with a diagram.
3. Discuss the constructional details of Hotchkiss drive.
4. List 3 effects of both, under inflation and over inflation in Tyres.
5. Describe the constructional details of clutch disc used in Automobiles.
6. Explain the working of Freewheel unit with a diagram.
7. Designate a "tyre size" with an example.

(5×6 = 30)

## PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

## UNIT — I

- III (a) Explain the working of coil spring type single plate clutch with a sketch. 7  
 (b) Illustrate the operation of Vacuum clutch with a diagram. 8

OR

- IV (a) Explain the working of multi-plate clutch with a sketch. 7  
 (b) List 4 advantages of diaphragm spring type clutch over coil spring type single plate clutch. 8

## UNIT — II

- V (a) Label a Transfer box with 4 wheel drive engaged. 7  
 (b) Describe the working of synchronizer mechanism in a gear box with a neat sketch. 8

OR

- VI (a) Explain the working of Torque converter with sketch. 7  
 (b) Illustrate the type of power transmission used in 2 wheeler bikes. 8

## UNIT — III

- VII (a) Explain the constructional details of fully-floating type rear axle with sketch. 7  
 (b) Name the drive line mechanism which helps an automobile to take a turn and explain its working. 8

OR

- VIII (a) Illustrate the differential locking mechanism for limited slipping. 7  
 (b) Explain the constructional details of Salisbury type and Split type Rear axle Casings. 8

## UNIT — IV

- IX (a) Discuss the constructional details of disc wheels. 7  
 (b) Sketch the cross-section of a tyre and describe its construction. 8

OR

- X (a) Sketch and explain the classification of tyres based on carcass. 7  
 (b) Distinguish between tubed tyre and tubeless tyre. 8