

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

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. List two types of clutch operating mechanisms.
2. List two functions of transfer box in vehicles.
3. Define the term final drive.
4. Define the term Divided wheel.
5. List 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. Explain the requirements of a good clutch unit in automobiles.
2. Explain the term Double Declutching and the procedure for shifting gears.
3. Discuss the constructional and operational details of Torque tube drive.
4. Differentiate between under inflation and over inflation in Tyres.
5. Write a short note on Fluid Flywheel with a sketch.
6. Illustrate the working principle of CVT with a line diagram.
7. List the factors affecting tyre performance.

(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) Sketch and explain the working of diaphragm spring type single plate clutch. 7
 (b) Discuss the Hydraulic operation of clutch with a diagram. 8

OR

- IV (a) Discuss the constructional features of clutch plate with a sketch. 7
 (b) Explain with Sketch, the constructional details of a Semi centrifugal clutch. 8

UNIT — II

- V (a) With the aid of sketch explain the working of Freewheel unit. 7
 (b) Describe the working of gear selector mechanism with gear lever on the top of the transmission case. 8

OR

- VI (a) Sketch and explain the working of Torque converter. 7
 (b) Label a 4 speed constant mesh gear box with 3rd gear in engaged position. 8

UNIT — III

- VII (a) Discuss the working of Hotchkiss drive drive. 7
 (b) Explain the working of a differential unit in a car. 8

OR

- VIII (a) Sketch and explain the working of Rzeppa joint. 7
 (b) Illustrate any two differential locking mechanisms. 8

UNIT — IV

- IX (a) Designate a wheel and a tyre, with examples and sketches. 7
 (b) Explain the classification of tyres based on carcass. 8

OR

- X (a) Sketch the cross-section of a tyre and describe its construction. 7
 (b) Explain the constructional details of alloy cast wheels and list its advantages. 8