

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

AUTOMOBILE CHASSIS

[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 the different arrangement of stub axles.
2. Enumerate different types of springs used in suspension system.
3. Define castor angle.
4. Write down the working components of air brake.
5. Define the term unsprung weight in suspension system.

(5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. List and explain various loads acting on the frame.
2. Explain about various sections used in automobile chassis frame.
3. Describe Ackermann steering mechanism.
4. Explain collapsible type steering column.
5. State reasons for using coil spring in suspension system.
6. Describe working of wheel cylinder in hydraulic brake.
7. List the factors depend on stopping distance during braking.

(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) List and explain different types of two wheeler frames. 8
 (b) Write notes on different types of four wheeler frame construction. 7

OR

- IV (a) Sketch and explain Lamoine and reverse Lamoine type of stub axle arrangement. 8
 (b) Make a sketch of front dead axle and mark the parts. 7

UNIT — II

- V (a) State the advantages of independent suspension system. 8
 (b) Draw a layout and explain air suspension system. 7

OR

- VI (a) Explain the working of telescopic shock absorber with the help of a figure. 8
 (b) Explain wishbone type front independent suspension with a figure. 7

UNIT — III

- VII (a) Write notes on wheel alignment. 8
 (b) Sketch steering linkage arrangement for independent suspension and name the parts. 7

OR

- VIII (a) Explain the working of re-circulating ball type steering gear box. 8
 (b) With a sketch explain importance of toe-in and toe-out in a vehicle. 7

UNIT — IV

- IX (a) Explain the operation of drum brake with a help of a sketch. 8
 (b) Draw layout of hydraulic brake system and explain its operation. 7

OR

- X (a) Make a comparison of disc and drum brakes. 8
 (b) List the advantages and disadvantages of hydraulic brake system. 7
