

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, APRIL – 2020**

AUTOMOBILE CHASSIS

[Maximum Marks: 75]

[Time: 2.15 Hours]

PART-A

(Answer *any three* questions in one or two sentences. Each question carries 2 marks)

- I. 1. What is the difference between live axle and dead axle?
2. State the use of spring shackle.
3. Define caster angle.
4. What is servo brake?
5. State two methods of attaching brake shoe liner with brake shoe. (3 x 2 = 6)

PART-B

(Answer any *four* of the following questions. Each question carries 6 marks)

- II 1. Sketch an automobile chassis and write one or two sentences about each component.
2. With a neat diagram explain features of Parallel link type independent suspension system.
3. Explain the working of Torsion Bar with neat sketch.
4. With the help of a sketch explain worm and roller type steering gear box.
5. Discuss the Ackerman steering principle.
6. Explain with a sketch swinging calliper type disk brake.
7. Explain the working of vacuum servo brake. (4 x 6 = 24)

PART-C

(Answer *any of the three units* from the following. Each full question carries 15 marks)

UNIT – I

- III (a) Describe with a sketch Reverse Elliot type Stub axle arrangement. (8)
(b) Discuss the necessity of providing various cross section in dead front axle. (7)

OR

- IV (a) Sketch the Elliot type of stub axle arrangement and discuss its working. (8)
(b) Discuss framed construction and frameless construction. (7)

UNIT – II

- V (a) Explain Helper spring set with a sketch. (8)
(b) Sketch and explain the constructional details of a coil spring. (7)

OR

- VI (a) Explain the working of direct acting telescope type hydraulic shock absorber. (8)
(b) Explain Trailing Link type rear Independent suspension system. (7)

UNIT- III

- VII (a) Discuss four factors affecting wheel alignment. (8)
(b) Sketch the rack and pinion steering gear and explain its working. (7)

OR

- VIII (a) Explain the steering linkage used with rigid front axle. (8)
(b) Write notes on collapsible type steering column. (7)

UNIT - IV

- IX (a) Explain the construction and working of a mechanical brake. (8)
(b) Explain with the help of a neat diagram brake valve in air brake system. (7)

OR

- X (a) Write four classification of brakes. (8)
(b) Explain with sketch, the working of Tandem Master Cylinder. (7)
