590 Register No.: [ ]

April 2024

Time – Three hours
(Maximum Marks: 100)

[N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.
2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

PART – A

1. List the functions of chassis frame.
2. Define: camber and toe-in.
3. Write the application of single plate coil spring clutch.
4. Write the difference between fluid coupling and torque convertor.
5. Draw the sketch of Rzeppa joint.
6. What is the need of differential lock?
7. Differentiate between rigid axle and independent suspension system.
8. What are the advantages of full floating axle?
9. What is leading and trailing shoe in brake system?
10. What are the effects of over and under inflation of tyre?

[Turn over.....

PART – B

11. (a) (i) Explain about light vehicle chassis frame with a neat sketch. (7)
(ii) Explain the front wheel geometry with neat sketches. (7)

(or)

(b) (i) Explain in detail about recirculating ball steering system. (7)
(ii) Describe the working of electronic power steering with a neat sketch. (7)

12. (a) Explain the working principle of multi plate clutch with a neat sketch.

(or)

(b) Explain the working principle of automatic transmission system with a neat sketch.

13. (a) Explain the construction and working principle of limited slip differential unit with a neat sketch.

(or)

(b) (i) Explain the construction of torque tube type propeller shaft with a neat sketch. (7)
(ii) Describe the Hotchkiss drive arrangement with a neat sketch. (7)

14. (a) (i) Explain the construction and working of air suspension system with a neat sketch.(7)
(ii) Explain semi elliptical and three quarter elliptical leaf spring with a neat sketch. (7)

(or)

(b) Explain the construction and operation of telescope type shock absorber with a neat sketch.

15. (a) (i) Describe the working principle of pneumatic braking system with a neat sketch. (8)
(ii) Describe the working of bleeding of hydraulic braking system with a neat sketch. (6)

(or)

(b) (i) Explain the construction of tubeless tyre with a neat sketch.(7)
(ii) Explain brake shoe with a neat sketch. (7)
