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Register No.:

October 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B

(2) Answer division (a) or division (b) of each question in PART - C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1. Mention the various loads acting on the frame.
2. What is the difference between dead and live axles?
3. Define tractive effort.
4. Name the various resistance offered to the motion of the vehicle.
5. What are the types of gears used for the final drive?
6. What are the main components of steering system?
7. What is servo action?
8. State the advantages of air suspension.

PART – B

9. What are the functions of front axle?
10. What is a transfer case? Where it is used?
11. Distinguish between Hotchkiss drive and torque tube drive.
12. Explain rack and pinion steering gear mechanism with a neat sketch.
13. Explain the principle of knee action.
14. Compare disc brakes and drum brakes.
15. What are the benefits of antilock braking system?
16. What is a torque converter? How does it differ from a fluid coupling?

[Turn over.....

PART – C

17. (a) Explain briefly the different types of chassis frame and their special features.

(Or)

(b) With neat sketches, explain the construction and working of semi floating and full floating rear axles.

18. (a) With a neat sketch, explain the working of diaphragm type friction clutch and state the advantages and disadvantages.

(Or)

(b) Explain the working of an epicyclic gear train and how the different speeds are obtained.

19. (a) Explain the construction and working of Bendix-Weiss type constant velocity universal joint with a neat sketch.

(Or)

(b) With a suitable sketch, explain the construction and working of a non slip differential unit.

20. (a) Name the types of power steering used. Explain the working of any one type of power steering with a neat sketch.

(Or)

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

21. (a) (i) What are the features of a tandem master cylinder?
(ii) Explain with a neat sketch the construction and working of tandem master cylinder.

(Or)

(b) With a neat sketch, explain the construction and operation of air assisted brake system.
