

**N-Scheme Model Examination Question Paper**Time : Three hours(Maximum Marks : 100)

*[N.B. : (1) For Part - A. Answer All Questions. All question carry equal marks. (3x10 = 30)  
(2) For Part - B. Answer all questions by choosing either A or B. (5 x 14 = 70)]*

**PART – A****(3x1 = 10)**

1. Name various types of load acting on the frame.
2. What is the purpose of front axle.
3. What are the requirement of clutch lining materials.
4. What is the purpose of transfer case?
5. What is Rezeppa joint?
6. What is differential lock?
7. Compare independent and rigid axle suspension
8. List purpose of various multi axle vehicles.
9. List purpose of wheel cylinder?
10. Why tyre rotation is necessary in vehicles?

**PART – B****(5x14 = 70)**

11. (a) (i) Explain about the functions of chassis frames with applications.  
(ii) Explain with neat sketches the reverse elliot type and lemoine type stub axle arrangements.  
(Or)
- (b) (i) What are the factors of front end geometry and explain any two factors with necessary sketches.  
(ii) Explain power assisted steering with necessary sketches.



12. (a) Explain the construction and working of a cone clutch with a neat sketch.

(Or)

(b) With a neat sketch explain the construction and operation of a synchromesh gear box.

13. (a) Explain with a neat sketch, the construction and working of Rzeppa constant velocity universal joint.

(Or)

(b) Explain Hotchkiss drive and torque tube drive with neat sketches.

14. (a) Explain the construction and working of a types shock absorber with a neat sketch.

(Or)

(b) (i) Briefly describe active suspension system

(ii) Explain full floating rear axle with necessary sketches.

15. (a) With a neat sketch explain the construction and operation of a hydraulic brake system.

(Or)

(b) (i) What are the different types of wheels used in automobiles? Explain any two type of wheels with simple sketches.

(ii) Discuss care and maintenance of tyres.