

Time: 3 Hours

Marks 80

N.B.

1. Question No.1 is compulsory
2. attempt any three out of remaining questions
3. Draw neat sketches to illustrate your answers
4. Figures to the right indicate full marks.

- Q1 With the help of neat sketch explain in brief 20
- a) Hotchkiss drive
 - b) Master cylinder
 - c) coil spring front suspensions system
 - d) Alkaline battery
- Q2 a) Explain in brief, the requirements of body structural system for road vehicle and describe lightweight materials for automobile application. 10
- b) Differentiate between fluid flywheel and torque convertor. Describe any one type of live (rear) axle. 10
- Q3 Write Short note on the following 20
- a) Disc Brake
 - b) Necessity of a gearbox
 - c) factors affecting tyre life
 - d) battery ratings
- Q4 a) Enlist the sensors used in modern automobiles with their functions in brief. 10
- b) Write short note and compare the semi integral and integral structures and state application. 10
- Q5 a) Explain the construction, working, advantages and disadvantages of multi plate dry friction clutch. 10
- b) What are the objectives of suspension? Describe telescopic type shock absorber. 10
- Q6 a) Explain Anti-locking braking system and tandem master cylinder. 10
- b) Discuss three modern trends in automobiles with their features and advantages. 10
