



(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions out of the **remaining** questions.
 (3) Draw **neat** sketches to illustrate your **answers**.
 (4) **Figures** to the **right** indicate **full** marks.

1. (a) Explain the working of Distributorless Ignition system. 5
 (b) Describe Radial Ply tyres. 5
 (c) Explain the process of shifting from 3rd gear to 2nd gear in a constant mesh gear box. 5
 (d) Explain working of wheel cylinder. 5
2. (a) Describe any two type of brake shoe arrangements used in drum brakes. 14
 (b) Explain construction, advantages and disadvantages of three quarter floating axle. 6
3. (a) For a 5 forward, 1 reverse speed constant mesh gear box :-
 (i) Draw the layout 7
 (ii) Explain the working with advantages and disadvantages. 7
 (b) Explain the construction, working and application of overdrive. 6
4. (a) What are the requirements of steering ? Explain Re-circulating Ball type steering. 10
 (b) Explain construction and working of Air Brakes. 10
5. (a) With neat sketch explain the construction, working, advantages and disadvantages of multiplate dry friction clutch. 10
 (b) Define the following terms w.r.t. steering geometry :- 10
 (i) Castor (iv) King Pin Inclination
 (ii) Camber (v) Combined Angle.
 (iii) Toe
6. (a) Describe construction and working of Wisbone suspension system. Also explain objects of suspension. 10
 (b) Explain the circuit diagram of combined current and voltage Regulator. Describe its working in detail. 10
7. Write a short notes on (any **four**) :- 20
 (a) Torsion Bar
 (b) Materials for Body Construction
 (c) Cutout Relay
 (d) Telescopic Shock Absorber
 (e) Freewheel Unit
 (f) Fluid Flywheel.