

Duration: 3hrs

Max Marks:80

- N.B. :** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Illustrate your answer with neat sketches wherever necessary.

- 1** Attempt any four from following six questions [20]
- a Explain Single Plate dry friction clutch with a neat sketch. [05]
 - b Explain electronic ignition system of vehicle with neat sketch [05]
 - c Explain Scope of AI in vehicles [05]
 - d Discuss functions of tyres in the vehicle. [05]
 - e Explain KPI and Camber with a neat sketch. [05]
 - f Describe the layout of hydraulic braking system [05]
- 2**
- a Explain exhaust brakes with a neat sketch. [10]
 - b Explain differential types of charging systems for batteries [10]
- 3**
- a Describe the Exhaust Braking system [10]
 - b Describe aerodynamic drag, lift and pitching moments. [10]
- 4**
- a Discuss different types of wheels with its advantages and disadvantages. [10]
 - b Describe construction and working of Telescopic Shock Absorber [10]
- 5**
- a Explain the construction and working of semi-floating axle [10]
 - b Differentiate Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) Communications. [10]
- 6**
- a Explain working principle of sliding mesh gearbox with well labeled sketch [10]
 - b Explain the construction and working of Alkaline battery with neat sketch and chemical reactions. [10]