

06/06/2025 BE MECHANICAL SEM-VII C-SCHEME VEH.SYSTEMS QP CODE: 10082236

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 Oversteering and Understeering. [05]
 - b Discuss cast alloy wheel with neat sketch. [05]
 - c Describe the layout of hydraulic braking system [05]
 - d Explain King Pin Inclination and Caster with a neat sketch. [05]
 - e Explain battery ignition system of vehicle with neat sketch [05]
 - f Explain Electronic Brake Distribution (EBD) system with its advantages. [05]
- 2** a Explain constant and working of constant mesh gearbox. What are its drawbacks? [10]
- b What is the necessity of differential? Explain the working of differential while taking a turn [10]
- 3** a Discuss in detail; Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) Communications. [10]
- b Explain the construction and working of Lead-Acid battery with neat sketch and chemical reactions. [10]
- 4** a Describe the construction and working of one leading – one trailing shoe type of arrangement in drum brakes [10]
- b Describe aerodynamic drag, lift and pitching moments. [10]
- 5** a Describe with neat sketch tubeless tyres with its advantages and disadvantages. [10]
- b Describe construction and working of Double Wishbone suspension system [10]
- 6** a Explain the construction and working of Standard Bendix Drive with a neat sketch. [10]
- b Explain construction and working of Tandem Master cylinder. [10]