

**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 five questions

- a Explain Toe-in and Camber with a neat sketch. [05]  
b Describe Front engine Front Wheel drive with advantages and disadvantages [05]  
c Explain principle of operation of overdrive [05]  
d Discuss factors affecting tyre life. [05]  
e Differentiate disc brake system with drum brake system. [05]
- 2** a Explain the construction and working of Lithium Ion battery. [10]  
b Explain V2V system of communication in passenger cars [10]
- 3** a Explain telescopic shock absorber with a neat sketch. [10]  
b Describe the construction and working of Recirculating Ball type steering gear [10]
- 4** a Describe tubeless tyre with its advantages over the tubed tyre. [10]  
b Describe aerodynamic drag, lift and pitching moments. [10]
- 5** a What is the significance of differential? Describe its construction and working. [10]  
b Describe the construction and working of Double Wishbone type of suspension [10]
- 6** a Describe construction and working of Constant Mesh gearbox. [10]  
b Explain working Electronic ignition system [10]

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