

[Time: 3 Hours]

[Total Marks:80]

Please check whether you have got the right question paper

- N.B:
1. Question No.1 is compulsory.
 2. Attempt any three out of remaining five questions.

- Q.1 Answer the following questions:
- a Write note on electromagnetic clutch with neat diagram. 05
 - b Draw neat labelled diagram of fluid flywheel and torque converter. 05
 - c Define camber, castor and kingpin inclination. 05
 - d Write the characteristics of brake lining material. 05
- Q.2
- a A multi disc clutch has three discs on the driving shaft and two on the driven shaft. The outside diameter of the contact surfaces is 240 mm and inside diameter is 120mm. Assuming uniform wear and coefficient of friction as 0.3; find the maximum axial intensity of pressure between the discs for transmitting 25 kilowatt at 1575 rpm. 10
 - b Why is rear axle in two halves? Also explain what are differential loads acting on the rear axle. 10
- Q.3
- a Give the construction of cross ply tyre. How does it differ from a radial ply tyre? 10
 - b Explain semi floating and full floating type of rear axles with neat labelled diagram and load acting on rear axle. 10
- Q.4
- a What are components of steering gearbox? Hence explain recirculating ball steering gear in detail with neat labelled diagram. 10
 - b Explain working of single plate clutch with neat labelled diagram. Also discuss about clutch plate construction in detail. 10
- Q.5
- a Explain different types of clutch linkages with neat labelled diagrams for each of them. 10
 - b Why stub axles are fitted in front axles? Sketch different types of stub axles. Also sketch the front axle of a car and show how it is connected with stub axle. 10
- Q.6
- a Sketch and explain working of Synchromesh gearbox. Explain mechanism of synchroniser ring in it. 10
 - b Describe an independent front end suspension using torsion bar. 05
 - c Describe a rigid axle front suspension using longitudinal leaf spring. 05