

(3 Hours)

[Total Marks: 80]

N.B: (1) Question no 1 is compulsory.

(2) Attempt any three out of remaining five questions.

- Q.1 a Explain the functional requirement of a clutch. Also explain the working of a centrifugal clutch with a neat labelled diagram. 10
b Explain the need and working mechanism of a transfer case in detail with a neat labelled diagram. 10
- Q.2 a Explain epicyclic gear box in detail. Also explain how many forward and reverse gears can be achieved by locking each component of a simple epicyclic gear train. 10
b What is the requirement of a steering system? Differentiate between hydraulic steering and electrohydraulic steering. 10
- Q.3 a Compare sliding mesh gear box with a synchromesh gearbox. Also show power flow diagram. 10
b Explain the function and working of a final drive. Explain different types of gearing used in a final drive. 10
- Q.4 a Explain semi floating and three quarter floating type of rear axles with neat labelled diagram and load acting on rear axle. 10
b Explain working of hydraulic brake system. 10
- Q.5 a What do you understand by dependent and independent suspension system? Explain one type of each with a neat labelled diagram. 10
b Explain radial ply and cross ply type of tire construction. 10
- Q.6 Write **short note** on following with a neat labelled diagram:
- a) Electronic power steering 04
 - b) Hotchkiss drive 04
 - c) Transaxle 04
 - d) Torque converter 04
 - e) Propeller shaft construction and joints 04
-