

Code No: **R41037****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, Oct/Nov - 2018****AUTOMOBILE ENGINEERING****(Mechanical Engineering)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions****All Questions carry equal marks**

- 1 a) Draw the layout of an automobile and indicate the various components. [8]
b) Define supercharging. Also explain the centrifugal type supercharger. [7]
- 2 a) State the advantages of a constant mesh gear box over the sliding mesh type. [7]
b) Explain the construction and working principle of over drive torque converter. [8]
- 3 Explain the effect of following on steering
(i) Camber (ii) Castor (iii) King pin inclination
(iv) toe-in (v) toe-out. [15]
- 4 a) Explain master cylinder of hydraulic braking system with a neat sketch. [8]
b) With a neat sketch, explain the working of torsion bar. [7]
- 5 a) Describe the principle of electrically operated Oil pressure gauge with neat sketch. [8]
b) Explain working of electric horn with neat sketch. [7]
- 6 a) Explain Antilock Braking System with relevant diagrams. [7]
b) Write short note on following:
(i) Air bags (ii) Mirrors [8]
- 7 a) What is catalytic and thermal converter? How they are helpful in reducing HC, CO and NOx emissions? [10]
b) Discuss about different types of pollutants. [5]
- 8 a) Discuss in detail the service details of engine cylinder head. [8]
b) What are the precautions to be taken while reassembling an engine? [7]