

**Vehicle Design**  
B.E. Sem. VIII [AUTO]

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**EVALUATION SYSTEM**

	<b>Time</b>	<b>Marks</b>
<b>Theory Exam</b>	4 Hrs.	100
<b>Practical &amp; Oral</b>	–	–
<b>Oral Exam</b>	–	25
<b>Term Work</b>	–	25

**SYLLABUS**

- 1. Springs**  
Types, Material, stresses in helical springs of circular wire, surge in springs, design and numerical solutions of all types of springs used in Automobile ie leaf spring , coil spring etc.  
**Clutch**  
Numerical exercises on single plate  
Design of multiplate, cone and centrifugal clutch.
- 2. Gear Box**  
Design of spur gear, Design of helical gears, Design of simple gear box, Design of bearings.
- 3. Propeller shaft, Universal Joint.**  
Theory and numerical, Design and design consideration.  
**Front axle and steering**  
Design and numerical  
**Frame**  
Design and numerical.
- 4. Differential & Steering System**  
Design of differential and axles etc., Numerical problems on steering systems.
- 5. Brakes**  
Numerical and design calculations on brakes.
- 6. Latest Trends**  
Transmissions like CVT , IVT and Brakes etc.

**References Books :**

1. Machine Design (*Pandya & Shah*)
2. Machine drawing (*K.R. Gopalkrishna*)
3. Automobile Engineering Drawing (*R. B. Gupta*)
4. Machine Design (*Khurmi & Gupta*)
5. Machine Design (*Sharma & Purohit*)
6. Automobile Design (*Giles*) Vol I, II & III
7. High Speed Diesel Engine (*P.M. Heldt*).
8. Internal Combustion Engine (*V. L. Maleev*)
9. Internal Combustion Engine (*L.C. Lichty*)
10. Internal Combustion Engines – Vol I (*C.F. Taylor*)
11. Automobile Chassis – Design and calculations Mir Publication (*P. Lukin and Gasparyants and Radionov*)

