

**B.TECH. SEM -VII MECHANICAL 2014 COURSE (CBCS) :  
WINTER - 2017**

**SUBJECT: AUTOMOBILE ENGINEERING**

Day : **Wednesday**  
Date : **17/01/2018**

**W-2017-2311**

Time: **02.30 PM TO 05.30 PM**  
Max. Marks: 60

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Draw neat and labeled diagram **WHEREVER** necessary.
  - 4) Assume suitable data if necessary.
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**Q.1** Sketch a neat layout of a four wheel drive and explain its working. **[10]**

**OR**

State different types of vehicle bodies and explain any one in detail.

**Q.2** Explain necessity of gear box in vehicle. How gears box helps to overcome gradients? Explain. **[10]**

**OR**

Enumerate different types of steering gears. Discuss salient features for each of them. Explain the construction and working of a rack and opinion type steering gear.

**Q.3** Sketch and describe disc brakes. What are their advantages? **[10]**

**OR**

Describe with neat sketch working of centrifugal clutch used in automobile.

**Q.4** Describe with neat sketch construction of tyre. What is role of tread design? Explain. **[10]**

**OR**

Explain following concepts used in suspension system.

- a) Sprung and unsprung mass                      b) Roll center

**Q.5** Write short note on maintenance and testing of Lead – Acid battery. **[10]**

**OR**

Explain :

- a) Starting system with used in automobile vehicle  
b) Battery ratings

**Q.6** Write short note on: **[10]**

- a) Operating modes of ECM                      b) electronic spark control

**OR**

Write short note on:

- a) Construction working of temperature sensors  
b) Position sensors

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