

**BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)**

**B.Tech.Sem - VII MECHANICAL : : SUMMER - 2022**

**SUBJECT : AUTOMOBILE ENGINEERING**

Day : Wednesday  
Date : 01-06-2022

**S-13459-2022**

Time : 02:30 PM-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** How do you classify automobiles? Explain them with the help of examples. [10]  
Give specification of any one petrol car of your choice.

**OR**

What do you mean by chassis of automobile? What are various types of chassis? Explain with advantages and disadvantages.

**Q.2** Draw a neat sketch of a typical differential unit in the back axle of a vehicle [10]  
and explain its working.

**OR**

Define following:

- |           |                        |                   |
|-----------|------------------------|-------------------|
| a) Castor | c) Kingpin inclination | e) Included angle |
| b) Camber | d) Toe in and Toe out  |                   |

**Q.3** Explain a hydraulic braking system with neat sketch. [10]

**OR**

What is the role of clutch in transmission? Describe with neat sketch working of single plate clutch used in automobile.

**Q.4** Explain the working and construction of the shock absorber. [10]

**OR**

How the tyres are classified and rated?

**Q.5** Describe in detail different methods of battery charging. What are the [10]  
indications of a fully and half charged battery?

**OR**

Explain with neat sketch:

- a) Lead acid battery
- b) Bendix drives

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

- |                             |                   |
|-----------------------------|-------------------|
| a) Electronic spark control | b) Optical sensor |
|-----------------------------|-------------------|

**OR**

Write short note on:

- |                   |                        |
|-------------------|------------------------|
| a) Oxygen sensors | b) Temperature sensors |
|-------------------|------------------------|

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