

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]  
(2125)

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**B. Tech 7th Semester Examination**  
**Automobile Engineering (OS)**  
**ME-7002**

**Time : 3 Hours**

**Max. Marks : 100**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Candidates are required to attempt five questions in all, selecting one question from each of the section A, B, C and D of the question paper and all the subparts of the questions in section E. Use of non-programmable calculators is allowed.

**SECTION - A**

1. What is a chassis? Give its classification. (20)
2. (a) Describe the parts of a clutch. (10)  
(b) Explain the requirement and operation of a clutch. (10)

**SECTION - B**

3. (a) Compare the selective type of Gear boxes. (8)  
(b) Write a short notes on epicyclic gear box with a diagram. State its advantages over other types. (12)
4. What is a Differential? What is its purpose? Explain its construction and working. (20)

**SECTION - C**

5. What are dampers and explain its importance. Also briefly explain Telescopic dampers and Rocking lever damper with neat sketch. (20)

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6. (a) Derive the fundamental equation of correct steering with a diagram. (10)  
(b) Explain general arrangement of steering system and explain the working of steering mechanism. (10)

**SECTION - D**

7. (a) Explain the principle and construction details of Drum Brakes and Disc Brakes. (10)  
(b) What are the requirement for a good tyre? Explain briefly about tubed and tubeless tyres. (10)
8. Define Alternator. Explain its working, construction and operation of Alternator. (20)

**SECTION - E**

9. Write short note for the following.
  - (i) Four wheel drive.
  - (ii) Clutch drag & clutch slippage.
  - (iii) Clutch linkage.
  - (iv) Universal joint and its requirement.
  - (v) Leaf springs. And its uses.
  - (vi) King pin inclination.
  - (vii) Need for suspension system.
  - (viii) Fading of brakes & brake binding.
  - (ix) Power assisted brakes.
  - (x) Capacity of a battery. (10×2=20)