

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]  
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**B. Tech 3rd Semester Examination**  
**Elements of Automobile Engineering (N.S.)**

**AU-211**

**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 :** (i) Attempt any four questions from Sections A, B, C and D by selecting at least one question from each section. All questions carry equal marks i.e. 15 each.
- (ii) Section E is compulsory. All questions carry 04 marks each.

**SECTION - A**

1. Explain in details the requirements of Vehicle frame. (15)
2. (a) What are wet and dry type clutches? (5)
- (b) Explain the construction and working of a single-plate clutch. (10)

**SECTION - B**

3. Explain the Sliding mesh type gear box. (15)
4. Explain construction and working of Rear (Live) axle. (15)

**SECTION - C**

5. (a) Explain factors affecting the comfortable ride. (5)
- (b) Explain the constructional details and working of leaf spring. (10)

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6. Explain Rack and Pinion Power steering gear. (15)

**SECTION - D**

7. Explain principle and constructional details of disc brake. (15)
8. Write a note on power assisted brakes. (15)

**SECTION - E**

9. (a) Give classification of automobile.
- (b) What is front engine rear wheel drive?
- (c) What is centrifugal clutch?
- (d) What is drive line?
- (e) Write the function of universal joint.
- (f) Define castor and camber.
- (g) Name different steering linkages.
- (h) Explain the need of brakes.
- (i) Explain function of hydraulic brake.
- (j) Explain briefly functions of tyre. (4×10=40)