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**B.Tech 6th Semester (ME) F-Scheme  
Examination, May-2017**

**AUTOMOBILE ENGINEERING**

**Paper-ME-302 F**

*Time allowed : 3 hours]*

*[Maximum marks : 100*

*Note : Attempt five questions in all. Question No.1 is compulsory and attempt four more questions by selecting at least one question from each Section.*

1. (a) What is transmission system and why it is necessary ?
- (b) Write a short note on automobile engineering.
- (c) What is an overdrive ? Write its advantages and applications.
- (d) Write a short note on leaf springs.
- (e) Explain about Toe-in and Toe-out. 4×5=20

**Section-A**

2. (a) What is an Automobile ? How front engine rear drive is different from front engine front drive, explain in detail. 15
- (b) What are future trends in automobile ? 5

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3. What is a Clutch ? Explain construction and working of : 20
- (a) Multiplate Clutch
  - (b) Centrifugal Clutch

**Section-B**

4. Explain the following in detail : 20
- (a) Synchro-mesh gear box
  - (b) Constant-mesh gear box
5. Write short notes on the following : 20
- (a) Propeller shaft
  - (b) Differential
  - (c) Semi floating rear axle.

**Section-C**

6. What is the need of suspension system in an automobile ? What are different types of suspension system ? 20
7. Explain the following with neat and clean diagram : 20
- (a) Caster
  - (b) Camber
  - (c) King Pin inclination

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**Section-D**

8. (a) Write about principle, construction and working of hydraulic braking system. 10
- (b) Why tyre rotation and wheel balancing are necessary for an automobile ? 10
9. What are the various automobile emission control methods ? Explain in detail with diagram. 20

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