

**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. $4 \times 5 = 20$

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

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

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