

Roll No .....

**ME-704**

**B.E. VII Semester**

Examination, December 2016

**Automobile Engineering**

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** i) Answer any five questions. In each question part A, B, C is compulsory and D part has internal choice.  
ii) All parts of each question are to be attempted at one place.  
iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.  
iv) Except numericals, Derivation, Design and Drawing etc.  
v) Assume missing data suitably, if any.  
vi) Draw neat and clean sketches/diagrams/figures wherever required.

1. a) State factors affecting location of engine.  
b) Compare front wheel drive and rear wheel drive.  
c) What do you understand by optimization of body shape?  
d) What is driver visibility? Discuss methods to improve it.

OR

Draw a layout of a four-wheeler automobile chassis. What design features are to be considered in making a chassis frame?

2. a) Draw front wheel assembly.  
b) What is Centre Point Steering?  
c) State conditions for true rolling motion.

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- d) Explain principles of types of wheel alignment.

OR

Describe the following :

- i) Slip angle
- ii) Over steer and under steer.
- iii) Castor.

3. a) State function and types of clutches.  
b) What is clutch lining and bonding?  
c) State salient features of torque convertor.  
d) Discuss various types of gear boxes with applications.

OR

Explain the working of fluid coupling.

4. a) What do you mean by uncertainty in automobile design?  
b) Distinguish between Design Factor and Factor of Safety.  
c) Write about tyres specification.  
d) Explain construction material and properties of tyres and tubes.

OR

How intelligent automobile control system works? Discuss.

5. a) State fuel quality standards in India.  
b) State about Catalytic Convertor.  
c) Briefly discuss battery operated vehicles.  
d) Compare Indian standards for vehicle emission :  
i) Bharat - I and Bharat - II  
ii) Euro - I and Euro - II

OR

Discuss the following (any two) :

- i) Wheel Alignment
- ii) Fuel Additives
- iii) Fuel Pump

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