

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 2767

Roll No.

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B.Tech.

(SEM. VII) THEORY EXAMINATION 2011-12

AUTOMOBILE ENGINEERING

Time : 3 Hours

Total Marks : 100

Note :— (i) Answer **all** questions.

(ii) Draw a neat sketch wherever necessary.

1. Answer any **four** from the following : (5×4=20)

- (a) What do you mean by "valve" and "valve gear mechanism" ?
- (b) Name various types of resistance encountered by a moving vehicle. How can these resistance be minimized ?
- (c) What do you mean by "gear ratio" ? What is the significance of low and high gear ratios ?
- (d) What is the necessity of gear box in automobile ?
- (e) Why maximum power and maximum torque is not produced at the same r.p.m. in an engine ?
- (f) What is an Idler gear ? Discuss its working.

2. Answer any **two** from the following : (10×2=20)

- (a) Describe the construction and working of Torque Converter. Explain its significance in fluid coupling.
- (b) Explain the working principle of differential gear and also explain its necessity in automobile.
- (c) Explain the terms : camber, castor, king-pin inclination and Toe-in. What are the effects of each on the steering characteristics ?

3. Answer any **two** from the following : (10×2=20)

- (a) What is the function of master cylinder ? Explain the working of master cylinder and wheel cylinder in automobile.
- (b) (i) Explain working of vacuum brake.
(ii) Discuss the load coming on a chassis frame.
- (c) What is the need of suspension system ? Explain the working of shock absorbers.

4. Answer any **two** from the following : (10×2=20)

- (a) Describe the working principle of a multipoint electronic fuel-injection system. What are the advantages of S.I. engine fuel injection system ?
- (b) Draw a simplified wiring circuit for lightning system of car and discuss the same.

- (c) Explain the working principle of a Magneto-ignition system.
How is it differ from Battery ignition system ?

5. Answer any **two** from the following : **(10×2=20)**

- (a) Describe the Air-cooled system of an automobile engine.
What are its applications, advantages and disadvantages ?
- (b) What is the need of lubrication system in an automobile ?
Explain the working principle of force-feed lubricating system of a four cylinder engine.
- (c) Write the names of various types of maintenance. Explain the preventive maintenance in detail.