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Question Paper Code : 72161

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Sixth/Seventh/Eighth Semester

Mechanical Engineering

ME 6602 – AUTOMOBILE ENGINEERING

(Common to Mechatronics Engineering, Robotics and Automation Engineering)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is frameless construction?
2. State the function of pushrod and rocker arm.
3. Which is most commonly used supercharger in automobile? Why petrol engines are rarely supercharged?
4. Give short note on Unit Injector system.
5. What is a free wheel? What is the importance of the free wheel in the transmission of an automobile?
6. Write short note on Panhard rod.
7. Give types of stub axle.
8. What is an include angle?
9. What are the merits and demerits of supercritical methanol (SCM) transesterification process?
10. Mention any four types of fuel cells.

PART B — (5 × 16 = 80 marks)

11. (a) With neat diagram explain components and drive systems in an automobile chassis.

Or

- (b) List I.C. Engine parts, its materials and functions.

12. (a) Draw the layout of an electronic ignition system and mention the function of each component.

Or

- (b) With a neat sketch, explain the working of a turbocharger and state how it differs from superchargers.

13. (a) Explain construction and working principle of a constant mesh gear box with neat sketch.

Or

- (b) With the aid of neat sketch explain the Torque tube drive.

14. (a) Explain with neat diagram steering geometry parameters in an automobile.

Or

- (b) Explain any one of the front independent suspension system with neat diagram.

15. (a) Explain LPG is an alternate fuel for petrol engine with diagram. Also explain its performance and emission characteristics.

Or

- (b) Explain construction and working principle of hybrid vehicle with neat sketch.