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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 50880

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2017
Sixth/Seventh/Eighth Semester
Mechanical Engineering
ME 6602 – AUTOMOBILE ENGINEERING
(Regulations 2013)
(Common to Mechatronics Engineering/Robotics and Automation Engineering)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions.

PART – A (10×2=20 Marks)

1. Sketch the Layout of Front engine and rear wheel drive vehicle.

2. Enumerate any two demerits of a monoque body construction over conventional body construction.

3. Compare and contrast between Carburetion and Mono point fuel injection used in motorcycles.

4. Differentiate between Bharat Stage III and Bharat Stage IV emission norms.

5. Mention the function of transfer case box used in all wheel drive vehicle.

6. Enumerate the forces acting on rear (live) axle of a vehicle.

7. Express a relation satisfying the condition for true rolling condition of a vehicle.

8. With a neat Block Diagram, list the components of a typical traction control system used in modern passenger car.

9. Differentiate between bio-fuel and bio-diesel.

10. Sketch the layout of a series configured electric vehicle.

PART – B (5×16=80 Marks)

11. a) Explain about the various aerodynamics forces and its influenced moments acting on a fast-moving passenger car. (16)

(OR)

b) Discuss about the procedures followed in incorporating Variable Valve Timing on a conventional IC engine. (16)

12. a) Describe the working of a Common Rail Diesel Injection System with a neat sketch. (16)

(OR)

b) Explain about any one of after treatment methods adapted to minimize the engine pollutants. (Include relevant figures). (16)

13. a) What is a torque converter ? Describe the working of a torque converter. (Include a simple sketch). (16)

(OR)

b) Enumerate the components used and its functions in a Hotchkiss drive configuration. (Include a simple layout). (16)

14. a) Draw the layout of a typical steering system used in a vehicle fitted with rigid suspension configuration and briefly discuss about the function of its constituent members. (16)

(OR)

b) With relevant block diagrams, analyze the working of 4 channel 4 sensor type ABS system used in passenger cars. (16)

15. a) i) List any 2 methods of hydrogen production. (4)

ii) Explain about anyone of thermochemical production process of Hydrogen. (12)

(OR)

b) With an indicative sketch, discuss about the working of a Polymer Electrolyte Membrane fuel cell. (16)