Mech 5/12/16 F.N

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

Question Paper Code : 80667

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Sixth Semester

Mechanical Engineering

ME 6602 — AUTOMOBILE ENGINEERING

(Common to Seventh Semester Mechatronics Engineering)

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the classification of chasses name according to its control method.
2. What are the main components of I.C. engine?
3. Define "Intermittent injection" of petrol engine.
4. Write the Emission norms of Euro BS IV for petrol vehicle (in g/Km.)
5. What is the use of slip joint?
6. List the types of Automobile clutches.
7. Name any four types of suspension spring.
8. Describe the advantages of steering Geometry.
9. What is the working principle of Fuel cell?
10. What you understand by the term Hybrid vehicle?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the construction of varies chasses frames used in automobile with neat figure. (16)

Or

(b) Explain with suitable sketches and value timing diagram, the working of a Variable Value Timing (VVT) system used in automobiles. (16)

12. (a) (i) What are the main functions of ECU? (4)

(ii) Describe the construction details of distributor type Diesel fuel injection pump with sketch. (12)

Or

(b) (i) What are the types of electronic ignition systems used in S.I. engine? (2)

(ii) Draw and explain the circuit diagram of electronic ignition system using a magnetic pick-up method. (14)

13. (a) (i) What are the functions of the transmission system? (8)

(ii) Sketch and explain the working method of fluid flywheel. (8)

Or

(b) Describe the line diagram of Synchromesh unit and mention the component (spring with ball type system). (16)

14. (a) (i) What are the functions of steering system? (4)

(ii) Discuss in detail working method of steering linkage system with suitable sketches. (12)

Or

(b) (i) What are the requirements of a good braking system? (8)

(ii) Explain the merits of independent suspension system. (8)

15. (a) What are the engine modification to be undertaken in the S.I. engine for Alcohols or Ethanol as alternate Fuel? (16)

Or

(b) (i) What are the advantages of Hybrid electric vehicle? (8)

(ii) Explain the construction and working of the PEM fuel cell with sketch. (8)