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B.E./B TECH. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2012

SEVENTH SEMESTER

MECHANICAL ENGINEERING

ME 501 AUTOMOBILE ENGINEERING

(REGULATIONS 2004)

Time : 3 hr

Max Mark : 100

Answer ALL Questions

PART- A (10 x 2 = 20 Marks)

1. What are the functions of chassis?
2. List down the major pollutants emanated from an I.C engine.
3. How a battery is discharged and charged?
4. Distinguish between a DC generator and an AC generator.
5. Mention the function of a fluid flywheel.
6. What are live and dead axles?
7. Define camber and caster.
8. Mention the function of a steering gear. List down any two types of steering gear.
9. List down the major constituents of natural gas and LPG.
10. Indicate the difference between an electric vehicle and a hybrid vehicle.

PART- B (5 x 16 = 80 Marks)

- 11 i). Draw the layout of an automobile and indicate its various components. (8)
ii). Discuss the performance characteristics of a four stroke cycle S.I. engine with a sketch. (8)
- 12 a i). Explain the principle of operation of a carburettor used in two wheelers with a neat sketch. (8)
ii). With a neat sketch explain the working principle of a multipoint injection system. (8)

(OR)

- b i). Explain with a neat sketch the construction of a starter motor. (8)
ii). Draw the layout of a battery ignition system and mention the function of each component. (8)

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- 13 a i). Explain the working principle of a fluid flywheel with a neat sketch. (8)
ii). With a neat sketch discuss the operation of a synchromesh gear box. (8)

(OR)

- b). Draw a neat sketch of a differential and explain its construction and principle of operation. (16)

- 14 a i). List down the different types of wheels. Discuss their relative merits. (8)
ii). Mention the function of various components of a steering system. (8)

(OR)

- b i). Explain the operation of a telescopic type shock absorber with a sketch. (8)
ii). With a neat sketch explain the principle of operation of a hydraulic braking system. (8)

- 15 a i). Discuss the properties of hydrogen suitable for use in I.C. engines. (8)
ii). Explain the method of using natural gas in a CI engine indicating its performance characteristics compared to a CI engine. (8)

(OR)

- b i). Explain the principle of operation of an electric vehicle with a neat sketch indicating its merits and demerits. (8)
ii). Discuss the principle of operation of a fuel cell with a neat sketch. (8)

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