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Eighth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Automotive Engineering

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. What are the methods of engine cooling? Explain with a neat labeled sketch the thermo syphon cooling system. (08 Marks)
- b. What is the function of cylinder liner? State advantages of using aluminium as cylinder liner. (08 Marks)
- c. Explain the splash lubrication with a neat sketch. (04 Marks)
- 2 a. Explain the construction and working principle of a Zenith carburetor with neat sketch. (10 Marks)
- b. Explain the working principle of mechanical fuel pump with neat sketch. (06 Marks)
- c. Explain briefly (i) Octane number (ii) Cetane number (04 Marks)
- 3 a. What are the objectives of super charging? Explain with neat sketch working principle of vane blower. (10 Marks)
- b. Write the comparison between turbo charging and mechanical super charging. (06 Marks)
- c. Explain briefly : (i) Inter cooler (ii) Turbo charger lag. (04 Marks)
- 4 a. Explain the construction and working principle of battery ignition system with neat circuit diagram. (10 Marks)
- b. Write the difference between battery and magneto coil ignition system. (05 Marks)
- c. With sketch explain the working principle of vacuum advance. (05 Marks)

PART – B

- 5 a. Explain with diagram the working principle of centrifugal clutch. (08 Marks)
- b. Explain with neat sketch working principle of fluid coupling. (08 Marks)
- c. What are the functions of transmission? (04 Marks)
- 6 a. With a neat sketch, explain the working of Hotch Kiss Drive. (08 Marks)
- b. Define the following terms : (i) Camber (ii) Castor (iii) King pin inclination (iv) Toe In and Toe Out. (08 Marks)
- c. What are the functions of differential? (04 Marks)
- 7 a. With neat sketch, explain the working principle of Air Suspension system. (08 Marks)
- b. What are the advantages and disadvantages of Hydraulic braking system. (08 Marks)
- c. Differentiate between Drum and Disc brakes. (04 Marks)
- 8 a. Explain the working principle of exhaust gas re-circulation (EGR) system with neat sketch. (08 Marks)
- b. Explain the controlling of crank case emission with a sketch. (08 Marks)
- c. What is catalytic converter? How they are helpful in reducing exhaust gas emission? (04 Marks)

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