CBCS SCHEME

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18ME752

Seventh Semester B.E. Degree Examination, June/July 2024
Automotive Engineering

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions, choosing ONE full question from each module.***

Module-1

1 a. Classify and Sketch the various methods of cylinder arrangements in multicylinder I.C. Engines. **(06 Marks)**

b. With neat sketches, explain the construction and purpose of dry and wet liners. **(06 Marks)**

c. Explain Swirl generation in C.I.engines. Name and sketch the different methods of swirl generation. **(08 Marks)**

OR

2 a. Why cooling is necessary for an I.C.Engines? Name the different types of water cooling systems used in I.C.Engines. **(04 Marks)**

b. Explain with neat sketch the working of thermosyphon system of cooling. **(08 Marks)**

c. Name the various types of lubrication systems used for IC Engines. With a neat sketch briefly explain the working of Splash lubrication system. **(08 Marks)**

Module-2

3 a. With a neat sketch, explain the working of Multi-plate clutch. **(06 Marks)**

b. With a neat sketch, explain the working of constant mesh gear box. **(08 Marks)**

c. Sketch and explain Hotch Kiss drive. **(06 Marks)**

OR

4 a. Classify the types of brakes used for automobiles. **(04 Marks)**

b. With a neat sketch, explain the working of master cylinder of hydraulic braking system. **(10 Marks)**

c. Explain the working of Vacuum Servo braking system. **(06 Marks)**

Module-3

5 a. Define the following :
(i) Camber
(ii) Caster
(iii) King pin inclination. **(06 Marks)**

b. What is Steering gear? Name the various types of steering gears. With a neat sketch, explain the working of worm and wheel steering gear. **(08 Marks)**

c. With a neat sketch, explain the working of torsion bar. **(06 Marks)**

OR

6 a. List and sketch the essential components of battery ignition system. **(06 Marks)**

b. Explain with neat circuit diagram the working of Reluctor type Electronic ignition system. **(08 Marks)**

c. Compare Battery and Magneto Ignition systems. **(06 Marks)**

Module-4

7 a. What is supercharging? List the various devices used for supercharging. Explain briefly with neat sketch the working of Root type supercharger. **(08 Marks)**

b. What is the need of Turbo charging? Explain the working of Turbo charging with a suitable sketch. **(08 Marks)**

c. Compare super charger and turbo charger. **(04 Marks)**

OR

8 a. What are Alternate fuels? Briefly explain the various types of Alternate fuels used for Auto engines. **(04 Marks)**

b. Name and explain briefly the various compensation techniques used for carburetor to provide correct proportion of Air / fuel ratio of all running conditions. **(08 Marks)**

c. With a neat sketch, explain the working of Fuel / Injector. **(08 Marks)**

Module-5

9 a. Briefly explain the different types of emissions from I.C. Engine. List the various emission control devices used for I.C. Engines. **(06 Marks)**

b. Explain Exhaust Gas Recirculation (EGR) with a neat diagram. **(08 Marks)**

c. With a neat sketch, explain the working of catalytic converter. **(06 Marks)**

OR

10 Write short notes on any four of the following :

a. Zenith Carburettor.

b. Positive Crank case ventilation.

c. Evaporative emission control system.

d. Redesign of combustion chambers to control emission.

e. Diesel Particulate Filter (DPF)

f. Euro IV norms for Petrol and diesel engines. **(20 Marks)**

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