

All questions carry equal marks.
Attempt any five questions.

1. a) Explain with a sketch the different components of the fuel induction subsystem of MPFI engine.
b) Write the function of the following used in MPFI engine:
i) Lambda Sensor ii) CALPAK iii) Electronic spark control
 2. a) With a neat sketch explain the different parts of a Lead acid battery used in light duty passenger vehicles.
b) What are the main drawbacks of conventional ignition system? Describe with a neat sketch the working of Capacitive Discharge Ignition (CDI) system used in vehicles.
 3. What are "constant choke" and "constant vacuum" type carburetors? Explain with a neat sketch the working of S.U. Carburettor with application.
 4. a) Explain in brief the advantages and disadvantages of compression swirl in CI engines.
b) Describe in brief the phenomenon of combustion induced swirl in CI engine. Also explain the combustion phenomenon in CI engines having pre-combustion chamber.
 5. a) Discuss in brief the necessary changes required in a SI engine to be operated with LPG.
b) List the advantages and limitations of Methanol as SI engine fuel.
 6. a) Compare the performance of overhead valve engines with side valve engines with respect to detonation, thermal efficiency and volumetric efficiency.
b) Explain in brief the working of M combustion chamber with its advantages and limitations.
 7. Write short notes on the following: (any four)
a) Electronic Spark Timing b) Squish c) Cold starting aids of CI engines d) F head combustion chambers e) Mass air flow sensor used in MPFI engine.
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