

- Q.26 What are the effect of locating supercharger on engine performance? (CO4)
- Q.27 How wankel engine works briefly explain with neat diagram? (CO2)
- Q.28 Write any five reasons of engine overheating?(CO2)
- Q.29 What are the alternate fuel for automotives? (CO4)
- Q.30 How positive crankcase ventilation method is useful to reduce emission? (CO4)
- Q.31 How NOX observer reduce the emission? (CO4)
- Q.32 Briefly discuss the bharat emission norms? (CO3)
- Q.33 How selective catalytic reduction technique helps in emission reduction?
- Q.34 What are the effects of diesel engine pollutants on human health? (CO3)
- Q.35 What are the effects of governor on engine performance? (CO4)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Write engine specification of any one Indian car? (Co4)
- Q.37 Describe the working opposed piston opposed cylinder engine with neat diagram? (CO3)
- Q.38 Discuss the cause and remedies of high oil consumption?
(**Note:** CO for official use only)

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SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 The ignition quality of diesel is expressed by
a) Cetane number b) Octane number
c) Calorific value d) None of the above
- Q.2 Diesel that detonates easily is called
a) High cetane diesel b) Low cetane diesel
c) Unleaded diesel d) Blended fuel
- Q.3 The function of positive crankcase ventilation (PCV) system is that it
a) Mixes fuel with air
b) Promotes combustion by creating a swirling movement in the air-fuel mixture
c) Returns blow by gases from the crankcase to the intake system
d) Feeds blow by gases to the exhaust manifold
- Q.4 The starting system includes
a) A battery, a starter, and an ignition switch
b) A battery, a distributor, and an ignition switch
c) A battery, a starter, and a distributor
d) A distributor, a starter, and an ignition switch

- Q.5 If the spark plug deposit indicates black coating of soot, it indicates that the engine has been generally operating on
- Too lean mixture
 - Stoichiometric mixture
 - Most economical mixture
 - Too rich mixture
- Q.6 Diesel engines, the duration between the time of injection and the time of ignition is called
- Spill cut-off
 - Delay period
 - Injection period
 - Ignition period
- Q.7 A three way catalytic converter
- Re-circulates exhaust gases
 - Burns fuel vapour gases
 - Reduces N_2 , H_2O , and CO_2 emission levels
 - Removes CO , H_c , and NO_2 from the exhaust gases passing through it.
- Q.8 The formula for Iso-octane is
- C_8H_{18}
 - C_7H_{17}
 - C_6H_{18}
 - C_7H_{18}
- Q.9 One effect of detonation is
- Delay in ignition
 - Loss of power
 - Overheating of engine
 - Over cooling of engine
- Q.10 The condition that results in large quantities of CO emission is
- Insufficient air during combustion
 - Insufficient fuel during combustion

- Low temperature combustion
- High temperature combustion

SECTION-B

Note: Objective type questions. All questions are compulsory. (CO-1) (10x1=10)

- Q.11 Cetane rating is used for _____ fuel.
- Q.12 There are _____ stages in combustion of petrol engine.
- Q.13 Full form of HCCI engine is _____.
- Q.14 Full form of CNG is _____
- Q.15 _____ filters the oil.
- Q.16 Latest Bharat stage _____ is in use in India.
- Q.17 Anti-knock agents reduce _____.
- Q.18 What is the full form of BHP?
- Q.19 If A/F ratio is 15:1 then air quantity (in ratio) _____.
- Q.20 _____ indicates the power of engine?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 What are the phases of combustion in SI engine, show with neat diagram? (CO2)
- Q.22 What are the methods of producing air movements in combustion chamber? (CO2)
- Q.23 What do you understand by octane and cetane no? (Co2)
- Q.24 What do you understand by priming of fuel feed pump? (CO2)
- Q.25 Explain any three types of nozzle? (CO3)