

Roll No.

Total No. of Pages : 01

Total No. of Questions : 08

M.Tech. (Mechanical Engineering) (Sem.-3)
ADVANCED INTERNAL COMBUSTION ENGINES

Subject Code : MTME-223

M.Code : 74999

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWELVE marks.

- Q1. Discuss the phenomenon of knocking and also explain the factors affecting knocking in SI engine.
- Q2. Differentiate between monopoint, multipoint and direct fuel injection systems.
- Q3. Draw schematic of various CI combustion chambers and explain their characteristics
- Q4. Elaborate the process of formation of oxides of nitrogen and particulate matter in diesel engines.
- Q5. Discuss the techniques of using alcohol fuels in IC engines.
- Q6. Explain in brief the different techniques of achieving Homogenous Charge Compression Ignition in CI engines. Enlist the advantages and disadvantages of HCCI combustion.
- Q7.
 - a) What are NO_x absorbers? Explain about its characteristics.
 - b) What is a driving cycle? Give its significance.
- Q8. Explain the following:
 - a) Difference between turbo charging and supercharging
 - b) Selective catalytic reduction process

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.