

Roll No. : .....

Total No. of Questions : 9 ] [ Total No. of Pages : 3

**22603**

**M.Tech. (ME) 1st Semester  
Examination, March-2021  
(CBCS Scheme)**

**IC ENGINE COMBUSTION AND POLLUTION  
Paper-MTME21C3**

*Time : Three Hours ]*

*[ Maximum Marks : 100*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note :- Question No. 1 is compulsory. Attempt total five questions by selecting at least one question from each Section.*

1. Explain the following :

- (a) What is Gasoline grades ?
- (b) What is flame stabilization ?

(c) Structure of detonation waves

(d) Orset apparatus 5×4=20

**Section–A** 20 each

2. Explain the different required properties for S.I. and C.I. engine fuels. Also explain the rating of fuel.
3. What are different types of Hydrocarbons in petroleum fuel ?

**Section–B** 20 each

4. Explain the following :
  - (a) Turbulent flame propagation
  - (b) Laws of thermodynamics
  - (c) Laminar premixed flame
  - (d) Adiabatic flame temperature
5. Explain the various factors influencing flame velocity and thickness.

**Section–C** 20 each

6. What is the effect of pollutant emission from premixed combustion and non-premixed combustion ?
7. Explain the procedure for coal combustion with different chemical processes involved.

**Section–D** 20 each

8. What is determination of air-fuel ratio ?
9. Discuss the various new techniques/inventions to control air pollution, that you have heard in the last few days.