

V SEMESTER B.TECH (MECHANICAL ENGINEERING) END SEMESTER EXAMINATIONS, NOV/DEC 2015



(05)

SUBJECT: INTERNAL COMBUSTION ENGINES THEORY AND AIR

POLLUTION [MME 341]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- Answer ANY FIVE FULL the questions.
- Missing data may be suitable assumed.

1A.

With a neat sketch explain the basic components of an Internal Combustion (05) engine

- **1B.** Define :
 - i) Compression ratio
- ii) Engine Capacity iv) Engine blow by
- iii) Dissociation
- v) Petrol Knock
- **2A.** How does electrode gap and turbulence affect the second stage of SI engine **(04)** combustion? Explain with neat sketches.
- **2B.** What would be the result of supplying diesel fuel in SI engines. (02)
- **2C.** How does change in compression ratio and ignition timings affect engine heat **(04)** transfer?
- **3A.** What are the merits of alcohol as an alternative fuel in IC engines. (03)
- **3B.** Explain why turbo charging is preferred over super charging. **(03)**
- **3C.** Mention the main factors which affect the tendency to detonate in SI engine? **(04)** Explain them briefly.
- **4A.** Give reason: Hydrogen is the best alternative fuel for IC engines (03)
- 4B. With a neat labelled sketch explain the working of Throttle Body Injection system. Mention the advantages of MPFI over TBI(04)
- **4C.** What do you mean by DI and IDI engines? Draw neat diagrams of two types (03) of DI combustion chambers
- **5A.** Justify the following if it is true, otherwise correct the sentence and then **(04)** justify.

(i) Lower volatility will result in better long trip economy

- (ii) Raw vegetable oils can be used in CI engines without modification of fuel.
- **5B.** In dual fuel engines combustion is a complex combination of SI engine and **(02)**

5C.	CI engine combustion. Explain. With a neat labelled sketch explain functioning of EGR system	(04)
6A. 6B.	Define Air Pollution. How does crevice volume contribute to air pollution Explain the formation of smoke and the methods to control it	(05) (05)