

#### Unit IV

7. (a) Explain the construction, working and limitation of chemiluminescent detector. What for it is used ? **16**
- (b) Write in brief about the prevention and control of noise pollution. **4**
8. (a) Explain the construction and working principle of chassis dynamometer. **16**
- (b) List various pollutants and explain its harmful effects. **4**

No. of Printed Pages : 04

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**F-195**

**B.Tech. EXAMINATION, May 2017**

(Sixth Semester)

(B. Scheme) (Main & Re-appear)

(AE)

AE-310-B

**AUTOMOTIVE POLLUTION AND CONTROL**

*Time : 3 Hours]*

*[Maximum Marks : 100*

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

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

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**4**

**30**

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**P.T.O.**

### Unit I

1. (a) Explain the effect of combustion timing and spark timing of  $\text{NO}_x$  formation in spark ignition engine. **16**  
(b) Draw the rate of injection formation in diesel engine. **4**
2. (a) Explain various design and operating parameters that effects HC formation in SI engine. **16**  
(b) Draw the equilibrium and kinetic curves of nitric oxide formation of S.I. engine. **4**

### Unit II

3. (a) With neat illustration, explain the theory of spray formation, combustion and emission formation in C.I. engine. **16**  
(b) Draw the efficiency curve for a catalytic converter with respect to air/fuel ratio. **4**

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4. (a) With an appropriate illustration, explain the effect of engine speed, combustion timing and cetane number on  $\text{NO}_x$  formation in C.I. engine. **16**  
(b) What is meant by FID ? What for it is used ? **4**

### Unit III

5. (a) What is meant by EGR ? What for it is used ? Explain the method with neat schematic diagram. Also draw its emission reduction characteristics. **16**  
(b) What is the reason behind the black smoke formation in direct injection diesel engine ? **4**
6. (a) Explain the detail about a three way catalytic converter with a neat sketch. Also explain the mechanism behind the carbon monoxide and nitric oxide reduction. **16**  
(b) Write short note on non-dispersive infrared analyser. **4**

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