

Anna University Exams– Regulation 2013

Part – B Important Questions – 7th Semester BE/BTECH

AT6703 Automotive Pollution and Control

Unit I

1. How the transient operation of the Turbo charged diesel engines will effect the emission formation? Explain it in detail.
2. What is meant by regulated pollution and unregulated pollution? Discuss briefly
3. Discuss the various types of vehicles in the metropolitan cities which cause the pollution.
4. Describe the effects of the following pollutants on environment. i) Unburned hydrocarbon ii) Carbon monoxide iii) Oxide of nitrogen iv) Sulphur dioxide
5. Describe about transfer operational effects on engine pollution, noise, vibration and harshness
6. What is environmental impact assessment? Explain the various steps in it.

Unit II

1. Briefly describe the factors affecting smoke formation in diesel engines, discuss the smoke control methods.
2. What are blue, white and black smokes in diesel engines? Describe the mechanism of black smoke formation.
3. i) Discuss about the control of nitric oxide based on equivalence ratio and engine manifold pressure. ii) brief about the evaporative emission control device with sketch
4. Explain the formation of nitric oxide in S.I engine with respect to its equivalence ratio and combustion
5. Explain the formation of HC and CO in S.I engines.

Unit III

1. Discuss in detail about the combined effect of cetane number , combustion time and engine speed on nitric oxide formation in C.I Engines
2. Write short notes on a) Design and operating variables on nitric oxide formation in SI engine. b) Two stroke engine pollution

3. Explain the directional effects of design and operating variables of 2-stroke engines on emission formation.
4. Briefly describe the factors affecting smoke formation in diesel engines, discuss the smoke control methods.

Unit IV

1. What is meant by secondary injection? How it is carried out? How it is controlling the emissions in a diesel engine? Discuss in detail
2. Explain the construction and working principle of thermal reactors with sketch.
3. Discuss the engine design modifications required for the control of unburned hydrocarbon emission.
4. Describe the exhaust gas recirculation system to control the oxides of nitrogen in the exhaust gas
5. i) Describe about the catalytic converter with sketch ii) Write short notes on control of emission using secondary air injection method

Unit V

1. Explain the FTP tests. Also explain the Bharath stage II and Euro norms of emission standards.
2. write about the procedure of ECE and FTP tests.
3. Which instrument is used for the measurement of CO,CO₂? Give its principle of operation, construction and working?
4. Explain the working principle of flame ionization detector to measure the concentration of UHBC in the engine exhaust gas.
5. Which instrument is dedicatedly used for nitric oxide measurement? Explain its working and limitations? All the Best for Exams