

Code No: **RT41245****R13****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****AUTOMOTIVE POLLUTION AND CONTROL****(Open Elective)****Time: 3 hours****Max. Marks: 70***Question paper consists of Part-A and Part-B**Answer ALL sub questions from Part-A**Answer any THREE questions from Part-B***\*\*\*\*\*****PART-A (22 Marks)**

1. a) What are the emissions standards for light commercial vehicles? [4]
- b) Brief about NO<sub>x</sub> formation mechanism in CI engine. [4]
- c) Name the post combustion treatment methods. [3]
- d) What are the economic challenges in SI engine? [4]
- e) What are the instruments measure the smoke? [3]
- f) Describe knock in SI engine [4]

**PART-B (3x16 = 48 Marks)**

2. a) What is volatile compounds, ammonia and amines? Explain its effects in detail. [8]
- b) Describe the European regulatory test procedures. [8]
3. a) List factors affecting emissions in CI engines and explain in brief. [8]
- b) Explain CO and HC formation mechanism in SI engines. [8]
4. a) How particulate traps works in diesel engine emission reduction? Explain. [8]
- b) Describe three-way catalytic converter with help of sketch. [8]
5. a) Explain cost of injection systems in CI engines. [8]
- b) What are catalyst materials and explain its economic constraints? [8]
6. a) Explain measuring instruments used for SI engine emissions. [8]
- b) Explain Bosch and Hartridge types in diesel engines. [8]
7. a) Discuss on alcohols as alternative fuels. [8]
- b) What are the advantages of vegetable oils in diesel engines? Explain. [8]