

Code No: **R41244****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, February/March - 2018****AUTOMOTIVE POLLUTION AND CONTROL****(Open Elective)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) What is meant by Bharat stages? Explain need of vehicle inspection. [8]
b) Explain ECE and FTP test procedures. [7]
- 2 a) List out operating and design variables affect petrol engine pollution and explain effects of A/F ratio and Spark timing. [8]
b) Explain formation mechanism of hydrocarbons and CO in SI engine. [7]
- 3 a) What are the emission sources in diesel engine? Explain in brief about its formation. [8]
b) Why NO_x emissions are more in diesel engine? Explain its effect. [7]
- 4 a) Describe working of exhaust gas recirculation with sketch and write its limitations. [8]
b) What is working principle of common rail fuel injection? Explain with sketch. [7]
- 5 a) How catalytic converter reduces the emissions? Explain with line diagram. [8]
b) Explain methods to treat the CI engine emissions. [7]
- 6 a) Describe in detail effects of periodic inspection on emission control. [8]
b) What are the catalyst materials? Explain economic consequences in automobiles. [7]
- 7 a) Elaborate working of flame ionization detector (FID) for HC measurement. [8]
b) Explain working of partial flow dilution tunnel with features diagram. [7]
- 8 a) How LPG and CNG effect the performance and emissions of engine? [8]
b) What are the properties of hydrogen? Explain its limitations as an alternative fuel. [7]