

Code No: **RT42241****R13****Set No. 1****IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018****AUTOMOTIVE CONTROL SYSTEMS****(Automobile Engineering)****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) Discuss the need for cold start and warm up phases in fuel injection systems. [4]
b) What is the significance of air-fuel ratio in Diesel engines? [4]
c) What do you mean by idle speed control? [3]
d) What do you understand by residual generation? [3]
e) What is an ABS system? Discuss its advantage. [4]
f) What do you understand by contact and non-contact sensors? [4]

PART-B (3x16 = 48 Marks)

2. a) Explain in detail, the inflammation of air fuel mixtures in IC engines. [8]
b) What do you understand by flame propagation? Discuss the parameters which influence flame propagation. [8]
3. a) Explain the significance of fuel evaporation. Discuss. [8]
b) With the help of a neat sketch, explain the working of four stroke diesel engine. [8]
4. a) What is Adaptive knock control? Explain in detail. [8]
b) What do you understand by Knocking in Spark ignition engines? [8]
5. a) Explain the modeling of air intake system in detail. [8]
b) Discuss the purpose of validation of the diagnosis system. Explain. [8]
6. a) What do you understand by PID driver model? Explain briefly. [8]
b) How do you estimate the road gradient by Luenberger- Observer method? [8]
7. a) Write short notes on Torque sensors. [8]
b) Explain hydraulic actuating system with the help of a neat sketch. [8]