

Code No: **R42241****R10****Set No. 1****IV B.Tech II Semester Supplementary Examinations, April - 2018****AUTOMOTIVE CONTROL SYSTEMS****(Automobile Engineering)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions  
All Questions carry equal marks**

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- 1 a) What is the potential of different fuels? Explain. [8]  
b) What do you mean by ideal combustion engines? Explain. [7]
- 2 a) Explain in detail about the effect of combustion time and spark timing on nitric oxide formation in spark ignition engine. [8]  
b) How the flame propagation taking place in IC engines? Explain with neat diagrams. [7]
- 3 a) How mass balance taking place in diesel engine modeling? Explain with neat diagram. [8]  
b) What is the model parameters considered in diesel engine modeling? How you will fit them? Explain. [7]
- 4 a) What is ideal speed? Explain adaptive lambda control with neat diagram. [7]  
b) Explain in detail about Knock sensors used in engine control systems. [8]
- 5 a) What is diagnosis of automotive engines? Explain. [7]  
b) What are the methods of validation of diagnosis system? Explain. [8]
- 6 a) How driveline control used for gear-shifting? Explain. [7]  
b) Explain driveline speed control with neat diagram. [8]
- 7 a) How road gradient is determined? Explain. [7]  
b) Explain the working of ABS vehicle control system with neat diagram. [8]
- 8 a) What is the importance of road surfaces and wind strength? Explain. [5]  
b) Explain the working Hybrid driver model with neat diagram. [10]