

Code No: **R1642241**

R16

Set No. 1

IV B.Tech II Semester Advanced Supplementary Examinations, Aug/Sep - 2022
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 FOUR questions from Part-B

PART-A(14 Marks)

1. a) Write the energy conversion in engine management systems? [2]
b) Mention the impact of fuel evaporation in modeling of diesel engine? [3]
c) List the advantages of exhaust gas oxygen sensor? [3]
d) Write about misfire detection? [2]
e) Define wind strength? [2]
f) Mention the principle of displacement sensor? [2]

PART-B(4x14 = 56 Marks)

2. a) Discuss the emissions of I/C engines? [7]
b) Explain fuel management and injection time calculation in engine management systems? [7]
3. a) Analyze the modeling of four stroke cycle diesel engine? [7]
b) Explain dynamics of cylinder. [7]
4. a) Interpret engine model for lambda control with lambda control circuit? [7]
b) Discuss adaptive knock control and cylinder balancing? [7]
5. a) Explain modeling of air intake system. [6]
b) Write about residual generation and residual evaluation? [8]
6. a) Analyze the adaptive cruise control and automated manual transmission? [7]
b) Explain road models and its requirements. [7]
7. a) Write about the design of mechatronics systems? [6]
b) Explain the working of torque sensors and temperature sensors. [8]

