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Roll No.....

MEPE-103**M.E./M.Tech. I Semester
Examination, December 2017
Advanced Control System****Time : Three Hours****Maximum Marks : 70**

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Discuss how to model a system using differential equations.
b) Discuss about state space models.
2. a) Discuss about discretization of continuous time state space model.
b) Discuss Laplace analysis of control systems.
3. a) Explain controllability, operability and stability.
b) Discuss the effect of Road disturbance upon control action.
4. a) Discuss the development of feedback control laws through state space technique.
b) Discuss about pole placement problem.
5. Discuss about variable structure control and its applications.

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6. a) Discuss about Lyapunov based control function.
b) Discuss about Phase plane Technique.
7. a) Discuss about Euler lagrange equations.
b) Discuss about Pontyazin's maximum principle.
8. Write short notes on any two of the following:
 - a) Bode and Nyquist analysis
 - b) Liapunov stability
 - c) Bolza problem
