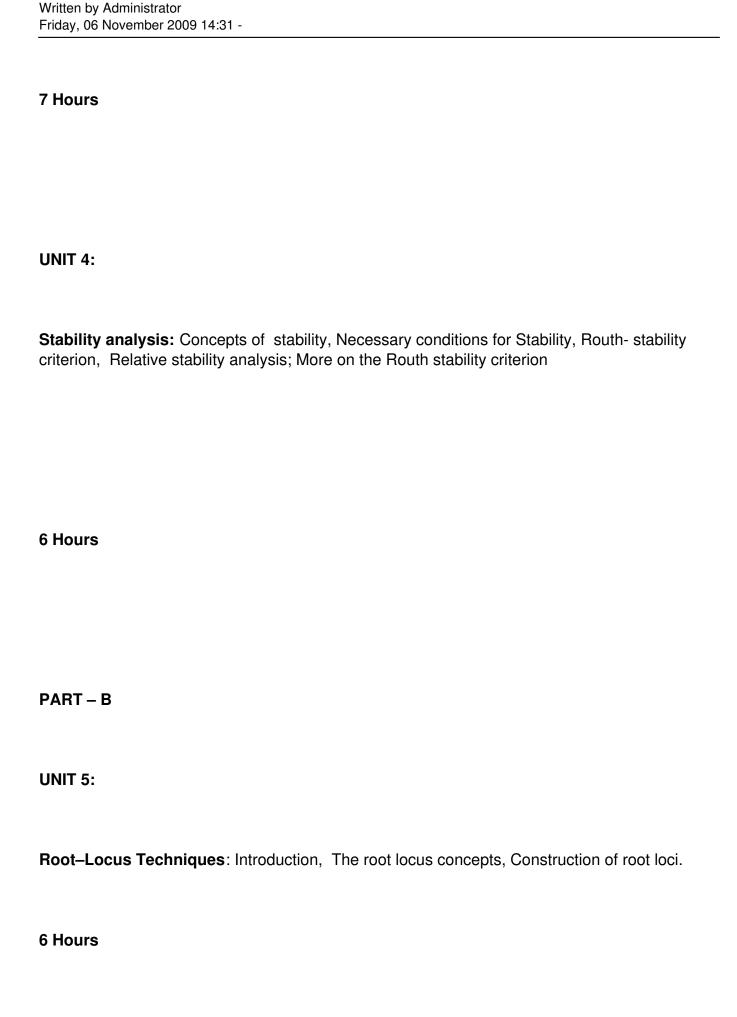
Written by Administrator Friday, 06 November 2009 14:31 -
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Exam Hours

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03	
Total Hrs.	
52	
Exam Marks	
100	

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PART - A
UNIT 1:
Modeling of Systems: The control system, Mathematical models of physical systems – Introduction, Differential equations of physical systems – Mechanical systems, Friction, Translational systems (Mechanical accelerometer, Levered systems excluded), Rotational systems, Gear trains, Electrical systems, Analogous systems
6 Hours
UNIT 2:
Block diagrams and signal flow graphs: Transfer functions, Block diagram algebra, Signal Flow graphs (State variable formulation excluded),
7 Hours
UNIT 3:
Time Response of feed back control systems: Standard test signals, Unit step response of First and second order systems, Time response specifications, Time response specifications of second order systems, steady – state errors and error constants.



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UNIT 6:	
Stability in the frequency domain: Mathematical preliminaries, Nyquis (Inverse polar plots excluded), Assessment of relative stability using Nyowith transportation lag excluded).	•
7 Hours	
UNIT 7:	
Frequency domain analysis: Introduction, Correlation between time an Bode plots, All pass and minimum phase systems, Experimental determ functions, Assessment of relative stability using Bode Plots.	ination of transfer
7 Hours	

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UNIT 8:	
Introduction to State variable analysis: Concepts of state, state variable and state models for electrical systems, Solution of state equations.	
6 Hours	
TEXT BOOK:	
1. J. Nagarath and M.Gopal , "Control Systems Engineering", New Age International (P) Limited, Publishers, Fourth edition – 2005	
REFERENCE BOOKS:	

UNIT 2: 2.4, 2.5, 2.6, 2.7

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1. "Modern Control Engineering", K. Ogata, Pearson Education Asia/ PHI, 4 th Edition 2002.
2. "Concepts of Control Systems", P. S. Satyanarayana; Dynaram publishers, Bangalore, 2001
3. "Control Systems – Principles and Design", M. Gopal, TMH, 1999
4. "Feedback control system analysis and synthesis", J. J. D'Azzo and C. H. Houpis; McGraw Hill, International student Edition.
Question Paper Pattern: Student should answer FIVE full questions out of 8 questions to be set each carrying 20 marks, selecting at least TWO questions from each part
COVERAGE IN THE TEXT BOOK:
UNIT 1: 1.1, 2.1, 2.2, 2.7

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UNIT 3: 5.1, 5.2, 5.3, 5.4, 5.5

UNIT 4: 6.1, 6.2, 6.4, 6.5, 6.6

UNIT 5: 7.1, 7.2, 7.3

UNIT 6: 9.1, 9.2, 9.3, 9.4,

UNIT 7: 8.1, 8.2, 8.4, 8.5, 8.6

UNIT 8: 12.1, 12.2, 12.3, 12.6