Written by Administrator

Sunday, 01 November 2009 10:27 -Sub Code 06MAT41 IA Marks 25 Hrs/ Week 04 **Exam Hours**

UNIT 1:

Written by Administrator Sunday, 01 November 2009 10:27 -		
03		
Total Hrs.		
:		
52		
Exam Marks		
:		
100		
PART – A		

Written by Administrator Sunday, 01 November 2009 10:27 -

Numerical Methods

Numerical solutions of first order and first degree ordinary differential equations – Taylor's series method, Modified Euler's method, Runge – Kutta method of fourth order, Milne's and Adams-Bashforth predictor and corrector methods (All formulae without Proof).

6 Hours

UNIT 2:

Complex Variables

Function of a complex variable, Limit, Continuity Differentiability – Definitions. Analytic functions, Cauchy – Riemann equations in cartesian and polar forms, Properties of analytic functions.

formal Transformation – Definition. Discussion of transformations: W = z

, W = e

Z

, W = z

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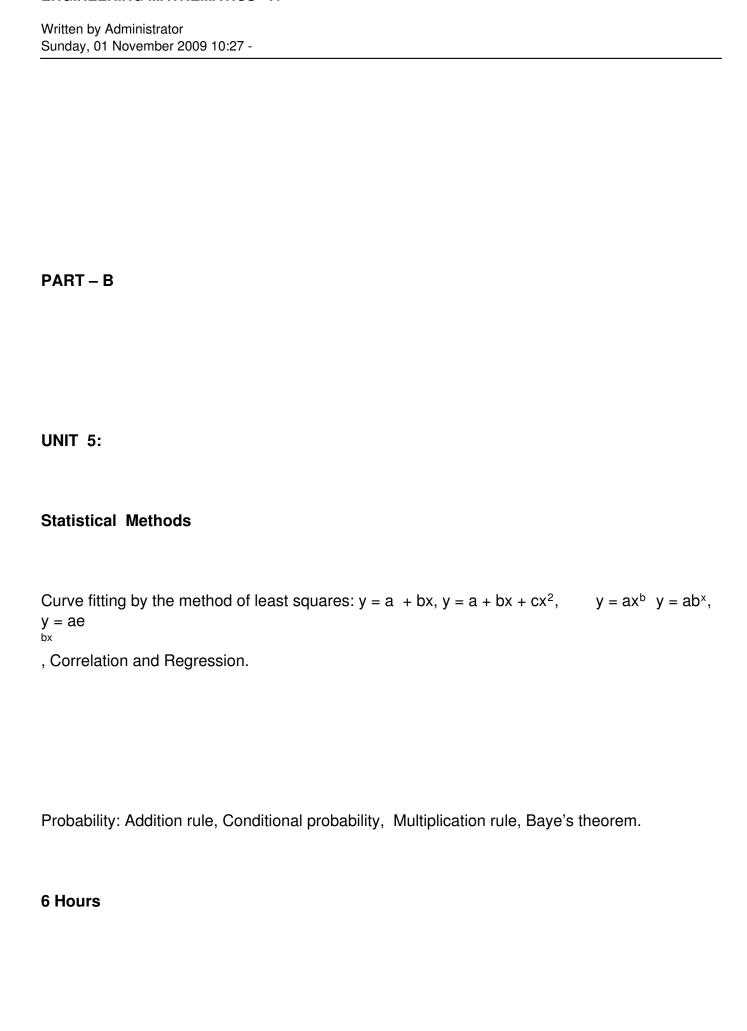
Z

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0 Bilinear transformations.

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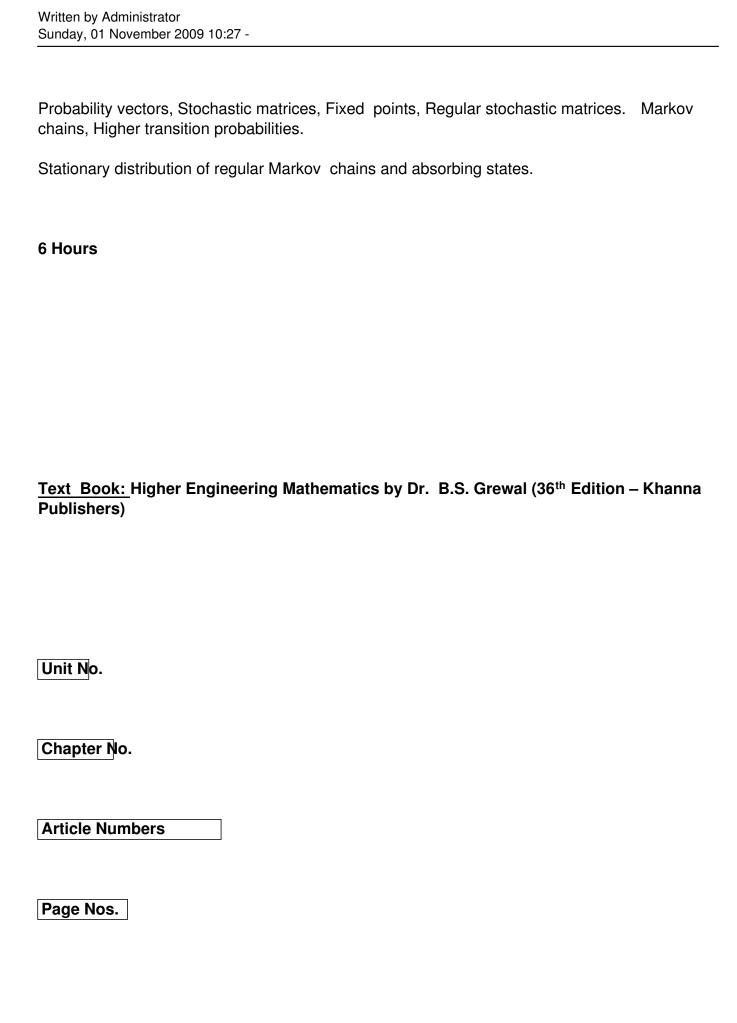
Sunday, 01 November 2009 10:27 -7 Hours **UNIT 3: Complex Integration** Complex line integrals, Cauchy's theorem, Cauchy's integral formula. Taylor's and Laurent's series (Statements only) Singularities, Poles, Residues, Cauchy's residue theorem (statement only). 6 Hours **UNIT 4:** Series solution of Ordinary Differential Equations and Special Functions Series solution – Frobenius method, Series solution of Bessel's D.E. leading to Bessel function of fist kind. Equations reducible to Bessel's D.E., Series solution of Legendre's D.E. leading to Legendre Polynomials. Rodirque's formula. 7 Hours



Sunday, 01 November 2009 10:27 -

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UNIT 6: Random Variables (Discrete and Continuous) p.d.f., c.d.f. Binomial, Poisson, Normal and Exponential distributions. 7 Hours **UNIT 7:** Sampling, Sampling distribution, Standard error. Testing of hypothesis for means. Confidenc e limits for means, Student's t distribution, Chi-square distribution as a test of goodness of fit. 7 Hours **UNIT 8:** Concept of joint probability – Joint probability distribution, Discrete and Independent random variables. Expectation, Covariance, Correlation coefficient.



Written by Administrator Sunday, 01 November 2009 10:27 -
27
27.1, 27.3, 27.5, 27.7, 27 8
914, 916 – 922
924, 933
20
20.1 to 20.10
630 - 650

Written by Administrator Sunday, 01 November 2009 10:27 -

20

20.12 to 20.14, 20.16 to 20.19

652 – 658

661 – 671



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16

16.1 to 16.6, 16.10, 16.13, 16.14

507 – 514,

521 – 523

526 – 529

Written by Administrator Sunday, 01 November 2009 10:27 -
1
23
1.12 to 1.14
23.9, 23.10, 23.11, 23.14, 23.16 to 23.18
20 – 25
755 – 762, 765
768 – 776

Written by Administrator Sunday, 01 November 2009 10:27 -
23
23.19 to 23.22, 23.26 to 23.30
776 – 780
783 – 798
23
23.31 to 23.37
791 – 816

