Written by Administrator Friday, 06 November 2009 14:29 -

Sub Code	
06MAT41  IA Marks	
25	
Hrs/ Week	
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Exam Hours	

Written by Administrat Friday, 06 November	tor 2009 14:29 -		
Total Hrs.			
:			
52			
Exam Marks			
:			
100			
PART – A			

# UNIT 1:

Written by Administrator Friday, 06 November 2009 14:29 -

#### **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.

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

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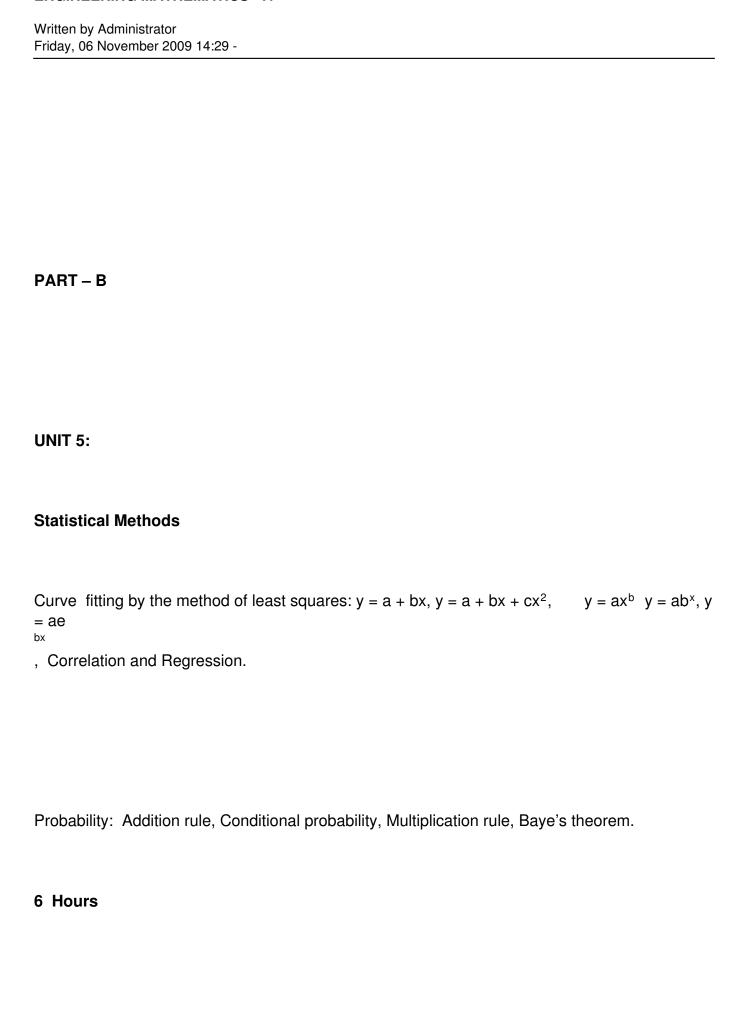
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0 Bilinear transformations.

Written by Administrator

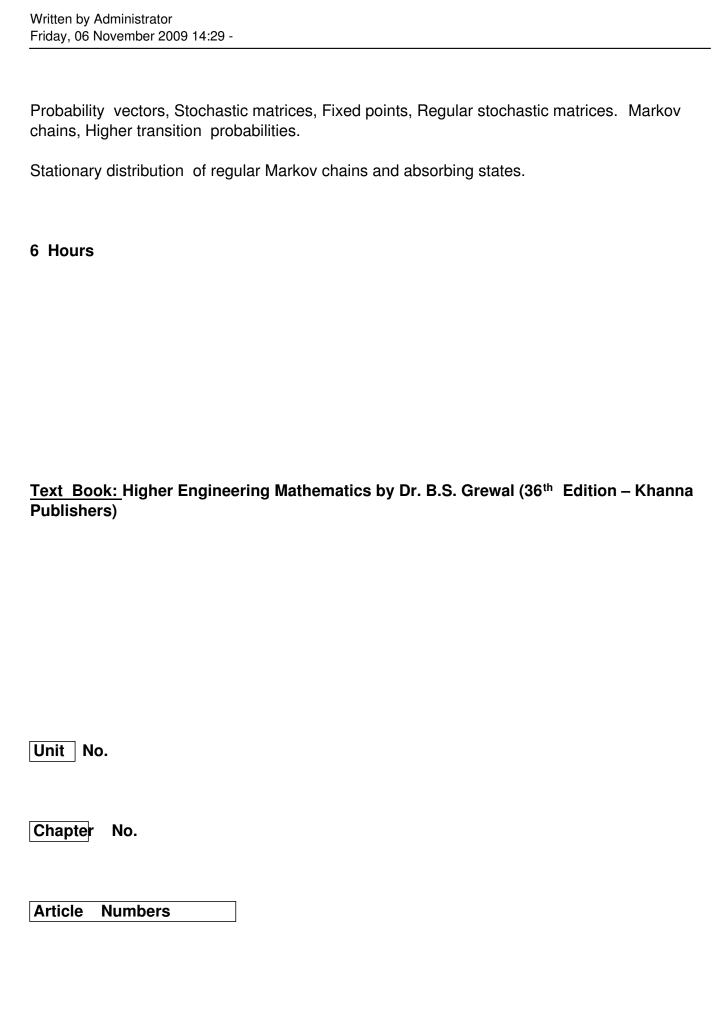
Friday, 06 November 2009 14:29 -7 Hours **UNIT 3: Complex Integration** Complex line integrals, Cauchy's theorem, Cauchy's integral formula. Taylor's and Laurent's series (Statements only) Singularities, Poles, Residues, Cauchy's residue theorem (statement only). 6 Hours **UNIT 4:** Series solution of 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



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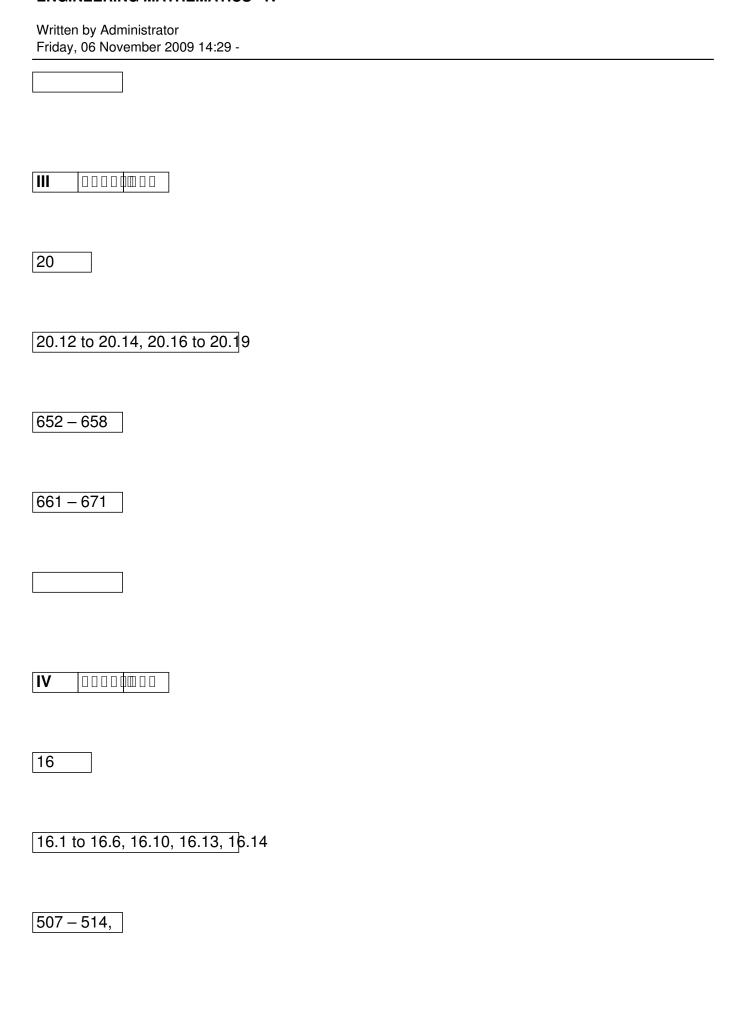
**UNIT 6:** Random Variables (Discrete and Continuous) p.d.f., c.d.f. Binomial, Poisson, Normal and Exponential distributions. 7 Hours **UNIT 7:** Sampling, Sampling distribution, Standard error. Testing of hypothesis for means. Confidence e limits for means, Student's t distribution, Chi-square distribution 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.



**ENGINEERING MATHEMATICS - IV** Written by Administrator Friday, 06 November 2009 14:29 -Page Nos. 27 27.1, 27.3, 27.5, 27.7, 27.8 914, 916 – 922 924, 933 Ш 20

20.1 to 20.10

630 – 650



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521 – 523
526 – 529
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23
1.12 to 1.14
00.0.00.40.00.44.00.46.40.40.40
23.9, 23.10, 23.11, 23.14, 23.16 to 23.18 20 – 25

23

Written by Administrator Friday, 06 November 2009 14:29 -755 – 762, 765 768 – 776 VI 23 23.19 to 23.22, 23.26 to 23.30 776 – 780 783 – 798 VII 

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23.31 to 23.37
791 – 816
Unit – VIII: <b>Text book: Probability by Seymour Lipschutz</b> (Schaum's series) Chapters 5 & 3
Reference Books:
1. <b>Higher Engineering Mathematics</b> by B.V. Ramana (Tata-Macgraw Hill).
2. <b>Advanced Modern Engineering Mathematics</b> by Glyn James – Pearson Education.
Note:

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<ol> <li>One guestion is to be set from each unit</li> </ol>
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2. To answer <u>Five</u> questions choosing atleast <u>Two</u> questions from each part.