Vellalar College for Women (Autonomous), Erode - 12.

Bachelor of Science in Mathematics with Computer Applications

Applicable to students admitted during the academic year 2018 - 19 and Onwards

Course Content and Scheme of Examinations (CBCS & OBE Pattern)

Semester I

Part	Study Component	Subject Code	Title of the Paper	Inst. Hrs./ Week	Exam. Dur. Hrs.	Max. Marks			Credits
						CIA	ESE	Total	
I	Language – I	18TAMU101/ 18HINU101	Tamil / Hindi	6	3	25	75	100	3
II	Language – II	18ENHU101/ 18ENLU101	English	6	3	25	75	100	3
III	Core	18MCUC101/ 18MSUC101	Classical Algebra ©	4	3	25	75	100	4
		18MSUC102/ 18MCUC102	Calculus©	5	3	25	75	100	4
	Allied – I	18MCUA101	Mathematical Statistics - I	7	3	25	75	100	5
IV	Foundation Course	18FOCU1ES	Environmental Studies	2	3	-	100	100	2
Total								600	21

Semester II

I	Language – I	18TAMU202/ 18HINU202	Tamil / Hindi	6	3	25	75	100	3
II	Language – II	18ENHU202/ 18ENLU202	English	6	3	25	75	100	3
III	Core	18MSUC203 / 18MCUC203	Differential Equations and Laplace Transforms ©	4	3	25	75	100	4
		18MCUC204	Trigonometry and Vector Analysis	5	3	25	75	100	4
	Allied – I	18MCUA202	Mathematical Statistics - II	7	3	25	75	100	5
IV	Value Education	18VEDU2HR	Value Education and Human Rights	2	3	-	100	100	2
Total								600	21

© Common for both B.Sc Mathematics and B.Sc Mathematics (CA)

SEMESTER I

CODE	COURSE TITLE
18MSUC101/ 18MCUC101	**CLASSICAL ALGEBRA**

Category	CIA	ESE	L	T	P	Credit
Core	25	75	56	4	-	4

Preamble

- To acquire complete knowledge of summation and approximation through Binomial, Exponential and Logarithmic series
- To understand concepts and improve problem solving skills on theory of equations
- To gain knowledge in theory of numbers

Prerequisite

- Knowledge in basic concepts of series, equations and types of equations

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1.	Find the sum of finite and infinite Binomial, Exponential and Logarithmic series
CO2.	Solve equations using various techniques
CO3.	Find the approximate roots of an equation by Newton's method and Horner's method
CO4.	Gain knowledge in number theory
CO5.	Study the concept of congruences and its properties

Syllabus

UNIT I **(12 hrs.)**

Binomial, Exponential and Logarithmic Series: Theorems – Statements without proofs – Emphasize on their Immediate Application to Summation and Approximation.

UNIT II **(12 hrs.)**

Theory of Equations: Roots of an Equation – Relations Connecting the Roots and Coefficients - Symmetric Function of Roots – Transformations of Equations – Reciprocal Equations – Character and Position of Roots – Descarte's Rule of Signs.

UNIT III **(12 hrs.)**

Theory of Equations: Rolle's Theorem – Multiple Roots – Newton's Method of Approximation for Finding Positive Roots upto Two Decimal Places – Horner's Method upto Two Decimal Places.

UNIT IV **(12 hrs.)**

Theory of Numbers: Prime and Composite Numbers – the Sieve of Eratosthenes – Divisors of a Given Number N – Euler's Function $\phi(N)$ - Integral Part of a Real Number – the Highest Power of a Prime pContained in n! - the Product of r Consecutive Integers is Divisible by r! – Congruences.

UNIT V **(12hrs.)**

Theory of Numbers: Properties of Congruences – Numbers in Arithmetical Progression – Theorem – Fermat's Theorem – Generalization of Fermat's Theorem – Wilson's Theorem – Lagrange's Theorem.

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	T. Natarajan, T.K. ManicavachagomPillay&K.S.Ganapathy	Algebra – Vol. I (Units I, II & III) and Vol. II (Units IV & V)	S.Viswanathan Printers and Publishers Pvt., Ltd.,Chennai.	Vol. I , 2014-2015 Vol. II, 2012-2013

Unit	Chapter	Sections
I	3	5 – 10, 14
	4	1 – 3, 5 – 9.1, 11(without limit)
II	6	1 – 12, 14 – 19, 21, 24
III	6	25, 26, 30
IV	5	1 – 12
V	5	13 – 18

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	R.M. Khan	Algebra - Classical, Modern, Linear & Boolean	New central Book Agency(P) Ltd.,Kolkata	Reprint 2016
2	H.S. Hall &S.R.Knight	Higher Algebra	AITBS Publishers, India	Reprint 2014
3	Erwin Kreyszig	Advanced Engineering Mathematics	Wiley & Sons, United States	2012, 9th Edition

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar and Subject Viva

Web Resources

1. http://nptel.ac.in/courses/106105162/18
2. http://nptel.ac.in/courses/111106083/33
3. https://www.khanacademy.org/math/algebra2/polynomial-functions/fundamental-theorem-of-algebra/v/possible-real-roots
4. http://www.math.kent.edu/~white/FCA/text/jan09ed.pdf
5. http://www.gutenberg.org/files/29785/29785-pdf.pdf?session_id=1888afffae379b4647cad5675a6b169d2543f267

- Question paper setters are asked to confine to the above **text books** only.

SEMESTER I

CODE	COURSE TITLE
18MSUC102/ 18MCUC102	**CALCULUS**

Category	CIA	ESE	L	T	P	Credit
Core	25	75	70	5	--	4

Preamble

- To focus on conceptual understanding
- To explore fundamental concepts of differential and integral calculus
- To explore the solutions of problems from a mathematical perspective, and
- To prepare students to succeed in upper level math, science, engineering and other courses which require calculus

Prerequisites

- Students must know the different types of functions and deriving new functions from given functions
- Students must know the integration of all basic types of functions

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Understand the meaning of differentiation using limits
CO2	Construct n^{th} derivatives of different functions
CO3	Compute radius and centre of curvature
CO4	Evaluate integration of trigonometric functions
CO5	Apply calculus concepts to solve real-world problems such as finding areas and volumes

Syllabus

UNIT I **(15 hrs.)**

Differentiation – Definition – Standard Forms – Logarithmic Differentiation – Differentiation of Implicit Functions – Differentiation of one Function with respect to Another – Successive Differentiation – Leibnitz Formula for n^{th} Derivative of a Product (Statements and Problems only)

UNIT II **(15 hrs.)**

Envelopes – Radius of Curvature in Cartesian and Polar Forms – Centre of Curvature – Evolutes and Involutes – Pedal Equations

UNIT III **(15 hrs.)**

Integration of the types $dx/(ax^2+bx+c)$, $lx+m/(ax^2+bx+c)$, $1/\sqrt{ax^2+bx+c}$, $(px+q)/\sqrt{ax^2+bx+c}$, $\frac{1}{a\cos x+b}$, $\frac{1}{a\sin x+b}$ and $\frac{1}{(a^2\cos^2 x+b^2\sin^2 x)}$ – Integration by parts – Reduction formulae – Problems – Bernoulli's formula – Problems

UNIT IV **(15 hrs.)**

Multiple Integrals : Evaluation of Double and Triple Integrals Problems only – Applications to Calculation of Areas and Volumes – Jacobians – Change of Variables in Double and Triple Integrals

UNIT V **(15 hrs.)**

Improper Integrals: Infinite Integrals – Simple Problems – Beta and Gamma Integrals – Their Properties – Relation between them – Evaluation of Multiple Integrals using Beta and Gamma Functions

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	S. Narayanan and T.K.ManicavachagomPillay	Calculus, Vol. I (Units I, II)	S.Viswanathan Printers and Publishers Pvt. Ltd., Chennai	2015
2	S. Narayanan and T.K.ManicavachagomPillay	Calculus, Vol. II (Units III, IV,V)	S.Viswanathan Printers and Publishers Pvt. Ltd., Chennai	2015

Unit I	Chapter II & III
Unit II	Chapter X
Unit III	Chapter I Sec. 7.3 Rule (b) Type (i) & (ii) Sec. 8 Case (i) & (ii) Sec. 9, 12, 13, 15
Unit IV	Chapter IV 2.2, 4, 5.3, 5.4, 6.3 Chapter VI 1.1, 1.2, 2.1 – 2.4
Unit V	Chapter VII

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	Tom M.Apostol	Calculus Vol.1 and Vol.2	John Wiley & Sons United States	2016, 2nd Edition
2	James Stewart	Calculus: Early Transcendentals	Thomson Brooks/Cole, USA	2008, 6th Edition

Pedagogy

Lecture, PPT, Subject Viva, Seminar, RBPT and Videos

Web Resources

1. http://nptel.ac.in/courses/111104085/29
2. https://www.khanacademy.org/math/calculus-home
3. https://ocw.mit.edu/courses/mathematics/18-01-single-variable-calculus-fall-2006/video-lectures/
4. http://www.math.odu.edu/~jhh/Volume-1.PDF
5. http://www.math.odu.edu/~jhh/Volume-2.PDF

- Question paper setters are asked to confine to the above **text books** only.

SEMESTER I

CODE	COURSE TITLE
18MCUA101	**MATHEMATICAL STATISTICS – I**

Category	CIA	ESE	L	T	P	Credit
Allied - I	25	75	100	5	-	5

Preamble

To study the basic concepts in statistics such as random variables, distributions of discrete and continuous type, bivariate distributions and functions of random variables

Prerequisite

- Knowledge about probability theory, conditional probability and Baye's theorem

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Recall the basic ideas of discrete distributions
CO2	Relate the basic concepts of continuous distributions
CO3	Compare the tools of bivariate distributions
CO4	Learn and apply the functions of random variables
CO5	Utilize the concepts of central limit theorem and point estimation

Syllabus

UNIT I **(21 hrs.)**

Discrete Distributions : Random Variables of the Discrete Type – Mathematical Expectations – Special Mathematical Expectation – The Binomial Distribution – *The Negative Binomial Distribution* – The Poisson Distribution.

UNIT II **(21 hrs.)**

Continuous Distributions : Random Variables of the Continuous Type – The Exponential, Gamma and χ^2 Distributions – *The Normal Distribution*.

UNIT III **(21 hrs.)**

Bivariate Distributions: Bivariate Distributions of the Discrete Type – The Correlation Coefficient- *Conditional Distributions* – Bivariate Distributions of the Continuous Type – The Bivariate Normal Distributions.

UNIT IV **(21 hrs.)**

Distributions of Functions of Random Variables: Functions of One Random Variable – Transformations of Two Random Variables – Several Random Variables – *The Moment - Generating Function Technique.*

UNIT V **(21 hrs.)**

Distributions of Functions of Random Variables: Random Functions Associated with Normal Distributions – The Central Limit Theorem – Approximations for Discrete Distributions – Chebyshev's Inequality and Convergence in Probability – *Limiting Moment-Generating Functions*. **Point Estimation** : Descriptive Statistics – Maximum Likelihood Estimation.

Note: Italic denotes Self Study Topics.

Text Book

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Robert V.Hogg, Elliot A.Tanis, Dale L.Zimmerman	Probability and Statistical Inference	Pearson Education Inc.	2015, 9th Edition.

Unit I	:	Chapter 2 – Sections 2.1 to 2.6
Unit II	:	Chapter 3 – Sections 3.1 to 3.3
Unit III	:	Chapter 4 – Sections 4.1 to 4.5
Unit IV	:	Chapter 5 – Sections 5.1 to 5.4
Unit V	:	Chapter 5 – Sections 5.5 to 5.9
		Chapter 6 – Section 6.1 & 6.4

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Presanna Sahoo	Probability and Mathematical Statistics	University of Louisville, USA	2013
2.	Barbara Illowsky, Susan Dean	Introductory Statistics	Openstax Rice University, Texas	2014
3.	Robert V.Hogg, Joseph W.Mckean, Allen T.Crag	Introduction to Mathematical Statistics	Pearson	2018, 8th Edition.
4.	S.C. Gupta & V.K.Kapoor	Fundamentals of Mathematical Statistics	Sultan Chand & Sons	2014

SEMESTER II

CODE	COURSE TITLE
18MSUC203/ 18MCUC203	DIFFERENTIAL EQUATIONS AND LAPLACE TRANSFORMS

Category	CIA	ESE	L	T	P	Credit
Core	25	75	56	4	-	4

Preamble

- To promote conceptual knowledge and problem solving skills of ordinary differential equations and partial differential equations
- To understand the evaluation of different functions through Laplace Transformation

Prerequisite

- Must know the basic formulae of differentiation and problem solving techniques

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Solve the first order differential equations through various techniques
CO2	Learn the methods of solving second order ODE for different functions of x
CO3	Evaluate the partial differential equations of first order using different methods
CO4	Apply Laplace transformation to solve differential equations
CO5	Make use of inverse Laplace transforms to solve the ordinary differential equations and system of differential

Syllabus

UNIT I **(12 hrs.)**

First order ODEs: First Order Higher Degree Equations– Solvable for x, y, p - Clairaut's form – Simultaneous Differential Equations of the Form (i) $f_1(D)x + f_2(D)y = h_1(t)$, $g_1(D)x + g_2(D)y = h_2(t)$where f_1, f_2, g_1 and g_2 Are Rational Functions of $D = d/dt$ with Constant Coefficients, h_1 and h_2 are Explicit Functions of t (ii) $dx / P = dy / Q = dz / R$ – Conditions of Integrability

UNIT II **(12 hrs.)**

Second order ODEs: Particular Integral of Equations of Second Order with Constant Co-efficients for xe^{mx} – Higher Order Equations when F(D) is easily Factorizable – Linear equations with Variable Co-efficients (Reducible to Quadratic form)

UNIT III **(12 hrs.)**

Partial Differential Equations: Formation of Equations by Eliminating Arbitrary Constants and Arbitrary Functions – Definition of General, Particular and Complete Solutions – Singular and General Solutions of First Order Equations in the Standard Forms (i) $f(p,q) = 0$, (ii) $f(z,p,q) = 0$, (iii) $f(x,p) = g(y,q)$, (iv) $z = px + qy + f(p,q)$ – Lagrange's Method of Solving Linear Differential Equations $Pp + Qq = R$

UNIT IV **(12 hrs.)**

Laplace transforms: Definition – Laplace Transforms of e^{at} , cos*at*, sin*at*and t^n where *n* is an Integer - First Shifting Theorem – Laplace Transforms of $e^{at}\cos bt$, $e^{at}\sin bt$ and $e^{at}t^n$ – Theorems of $L\{f'(t)\}, L\{f''(t)\}, L\{f^n(t)\}$.

UNIT V **(12 hrs.)**

Inverse Laplace Transforms: Definition – Solution of Differential Equations with Constant Coefficients using Laplace Transformation – Solving System of Linear Differential Equations using Laplace Transformation

Text Book

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	S. Narayanan &T.K.ManicavachagomPillay	Calculus Vol. III	S. Viswanathan Printers and Publishers Pvt. Ltd., Chennai	Reprint 2015

Unit	Chapter	Sections
I	1	5 – 7.3
	3	1 –6
II	2	1 – 4, 8, 9
III	4	1 – 6
IV	5	1 – 5
V	5	6 – 9

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1	M.D.Raisinghania	Ordinary and Partial Differential Equations	S.Chand& Sons, New Delhi	2016, 18th Edition
2	Erwin Kreyszig	Advanced Engineering Mathematics	Wiley & Sons, United States	2012, 9th Edition
3	B.S.Grewal	Higher Engineering Mathematics	Khanna Publishers, New Delhi	2014, 43rd Edition

Pedagogy

Lecture, PPT, Quiz, Assignment, Group Discussion, Seminar and Subject Viva

Web Resources

1. http://nptel.ac.in/courses/111105035/22
2. http://nptel.ac.in/courses/103103037/5
3. https://ocw.mit.edu/courses/mathematics/18-03sc-differential-equations-fall-2011/unit-iii-fourier-series-and-laplace-transform/laplace-transform-basics/
4. http://www.math.ust.hk/~machas/differential-equations.pdf
5. https://www.math.psu.edu/shen_w/PDF/NotesPDE.pdf

- Question paper setters are asked to confine to the above **text book** only.

SEMESTER II

CODE	COURSE TITLE
18MCUC204	TRIGONOMETRY AND VECTOR ANALYSIS

Category	CIA	ESE	L	T	P	Credit
CORE	25	75	72	3	--	4

Preamble

To explore the solution of problems from a mathematical perspective and fundamental concepts of trigonometry and vector analysis. To prepare students to succeed in upper level math, science, engineering and other courses that require trigonometry and vector analysis.

Prerequisites

- Students must know the basics of trigonometric identities and complex number system
- Essential knowledge in scalars and vectors

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Learn to use trigonometric function to solve the problems and understand the concept of logarithmic form of a complex number
CO2	apply the ideas of tangent, normal vectors and to study the motion of an object along a space curve
CO3	find the rate of change of a function of two or more variables in any direction
CO4	Interpret the concepts of gradient, divergence and curl
CO5	Understand the concept of the line, surface and volume integrals

Syllabus

UNIT I **(15 hrs.)**

Expansions and Logarithm of a Complex Number: Expansion of $\cos n\varphi$, $\sin n\varphi$, $cos^n \varphi, sin^n \varphi$ – **Hyperbolic functions** – Separation of real and imaginary parts of $\sin(\alpha + i\beta)$, $\cos(\alpha + i\beta)$, $\tan(\alpha + i\beta)$, $\sinh(\alpha + i\beta)$, $\cosh(\alpha + i\beta)$, $\tanh(\alpha + i\beta)$, $\tan^{-1}(\alpha + i\beta)$ - Logarithm of a Complex Number.

UNIT II **(15 hrs.)**

Vectors and the Geometry of Space : Three-Dimensional Coordinate Systems – Vectors – The Dot Product – The Cross Product – Equations of Lines and Planes – Cylinders and Quadric Surfaces – **Vector Functions:** Vector Functions and Space Curves – Derivatives and Integrals of Vector Functions – *Arc Length and Curvature* – Motion in Space: Velocity and Acceleration

UNIT III **(15 hrs.)**

Partial Derivatives: Functions of Several Variables – Limits and Continuity – Partial Derivatives – Tangent Planes and Linear Approximations – *The Chain Rule* – Directional Derivatives and the Gradient Vector – Maximum and Minimum Values – Lagrange Multipliers

UNIT IV **(15 hrs.)**

Differentiation of Scalar and Vector Point Functions: Scalar and Vector functions - Level Surfaces - Directional derivative of a Scalar Point Function - Gradient of a Scalar Point Function - Summation notation for Gradient - Gradient of *f(r)* - Divergence and Curl of a Vector Point Function - Summation notation for Divergence and Curl - Laplacian Differential Operator - Other Differential Operators - Divergence and Curl of a Gradient -*Divergence and Curl of a Curl* - Examples.

UNIT V **(15 Hrs.)**

Integration of Point Functions: Line Integrals - Independence of Path of Integration - Conservative Field and Scalar Potential - *Line Integral of a Conservative Vector* - Surface Integrals - Volume Integrals - Cylindrical and Spherical Polar Coordinates - Examples.

Note: *Italics* denote Self Study Topics

Text Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	S. Narayanan and T.K.Manicavachagom Pillay	Trigonometry	S.Viswanathan Printers and Publishers Pvt.Ltd., Chennai	2015
	Unit I : Chapter 3 Sec. 1 & Sec. 4 Chapter 4 Sec. 1 & Sec. 2 Chapter 5 Sec. 5			
2.	James Stewart	Calculus: Early Transcendentals (Units II, III)	Thomson Brooks/Cole, USA	2016, 8th Edition
	Unit II : Chapter 12 Sec. 12.1 - 12.6 Chapter 13 Sec. 13.1 - 13.4 Unit III : Chapter 14 Sec. 14.1 - 14.8			
3.	P. Duraipandian & Kayalal Pachaiappa	Vector Analysis (Units IV,V)	S.Chand & Company PVT.Ltd	2014, 1st Edition
	Unit IV : Chapter 2 Sec. 2.1 - 2.13 Unit V : Chapter 3 Sec. 3.1 - 3.8			

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Robert E Moyer, Frank Ayres JR	Schaum's Outlines Trigonometry	Tata McGraw Hill Publishing Company, New Delhi	2013, 5th Edition
2.	M.D.Raisinghania, H.C.Saxena, H.K.Dass	Trigonometry	S.Chand & Sons, New Delhi	2002

Pedagogy

Lecture, PPT, Quiz, Group Discussion, Seminar

- Question paper setters are asked to confine to the above **text books** only.

CODE	COURSE TITLE
18MCUA202	MATHEMATICAL STATISTICS – II

Category	CIA	ESE	L	T	P	Credit
Allied - I	25	75	100	5	-	5

Preamble

To gain the knowledge about estimators, confidence intervals and testing of statistical hypothesis.

Prerequisite

- Knowledge of random variables and distributions

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement
CO1	Understand the ideas of point estimation
CO2	Classify the tools of interval estimation
CO3	Demonstrate the concepts of test of statistical hypothesis
CO4	Apply the ideas of parametric test and contingency table
CO5	Develop the methods of variance

Syllabus

UNIT I **(21 hrs.)**

Point Estimation: *A Simple Regression Problem* – Asymptotic Distributions of Maximum Likelihood Estimators – Sufficient Statistics – Bayesian Estimation.

UNIT II **(21 hrs.)**

Interval Estimation : Confidence Intervals for Means – Confidence Intervals for the Difference of Two Means – Confidence Intervals of Proportions – *Sample Size*.

UNIT III **(21 hrs.)**

Tests of Statistical Hypothesis : Tests about One Mean – Tests of the Equality of Two Means – Tests about Proportions – *Power of a Statistical Test* – Best Critical Regions.

UNIT IV **(21 hrs.)**

More Tests : Chi-Square Goodness-of-Fit Tests – *Contingency Tables* – One - Factor Analysis of Variance.

UNIT V **(21 hrs.)**

More Tests: *Two - Way Analysis of Variance* – General Factorial and 2^k Factorial Designs – Tests Concerning Regression and Correlation.

Note: Italic denotes Self Study Topics.

Text Book

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Robert V.Hogg, Elliot A.Tanis, Dale L.Zimmerman	Probability and Statistical Inference	Pearson Education Inc.	2015, 9th Edition.
Unit I : Chapter 6 – Sections 6.5 to 6.8				
Unit II : Chapter 7 – Sections 7.1 to 7.4				
Unit III : Chapter 8 – Sections 8.1 to 8.3, 8.5 & 8.6				
Unit IV : Chapter 9 – Sections 9.1 to 9.3				
Unit V : Chapter 9 – Sections 9.4 to 9.6				

Reference Books

Sl.No.	Author Name	Title of the Book	Publisher	Year and Edition
1.	Presanna Sahoo	Probability and Mathematical Statistics	University of Louisville, USA	2013
2.	Barbara Illowsky, Susan Dean	Introductory Statistics	Openstax Rice University, Texas	2014
3.	Robert V.Hogg, Joseph W.Mckean, Allen T.Crag	Introduction to Mathematical Statistics	Pearson	2018, 8th Edition.
4.	S.C. Gupta & V.K.Kapoor	Fundamentals of Mathematical Statistics	Sultan Chand & Sons	2014

Pedagogy

Lecture, PPT, Quiz, Group Discussion, Seminar

- Question paper setters are asked to confine to the above **text book** only

VELLALAR COLLEGE FOR WOMEN(AUTONOMOUS), ERODE – 12

DEPARTMENT OF MATHEMATICS(CA)

B.SC. MATHEMATICS (CA)

Question Paper Pattern

Bloom's Taxonomy Based Assessment Pattern

Components of CIA marks

Test (I & II)	Assignment / Seminar / Subject viva	Model Examination	Total
10	5	10	25

Continuous Internal Assessment I & II

Bloom's Category	Section	Choice	Marks	Total
K1	A	Compulsory	2 x 2 = 4	30
K1, K2	B	Either / Or	2 x 5 = 10	
K2, K3	C	Open Choice (2 out of 3)	2 x 8 = 16	

Model and End Semester Examinations

Bloom's Category	Section	Choice	Marks	Total
K1	A	Compulsory	5 x 2 = 10	75
K1, K2	B	Either / Or	5 x 5 = 25	
K2, K3, K4	C	Open Choice (5 out of 8)	5 x 8 = 40	

Components of CIA marks

Test (I & II)	Assignment / Seminar / Subject viva	Model Examination	Total
8	4	8	20

Continuous Internal Assessment I & II

Bloom's Category	Section	Choice	Marks	Total
K1	A	Compulsory	2 x 2 = 4	20
K1, K2	B	Either / Or	2 x 3 = 6	
K2, K3	C	Open Choice (2 out of 4)	2 x 5 = 10	

Model and End Semester Examinations

Bloom's Category	Section	Choice	Marks	Total
K1	A	Compulsory	5 x 2 = 10	55
K1, K2	B	Either / Or	5 x 3 = 15	
K2, K3, K4	C	Open Choice (5 out of 8)	5 x 6 = 30	