## Vivekananda Degree College

### Rajajinagar, Bangalore -55

# **Department of Mathematics**LESSON PLAN FOR THE ACADEMIC YEAR 2020-2021

(Online classes from SEPT 2020 – FEB 2021)

Program: BSc

Course/Paper Name: Mathematics

Semester: First Semester

Class: 1st Year B.Sc.

Total Hours: 56

#### **THEORY**

	Incori			
Sl.No	Topic covered	No.of lecture hours	Methodology	Initials
	Algebra I – Matrix			
1.	Introduction	1	Lecture + interaction	SNH
2.	Elementary row and column transformations	1	Blackboard + Lecture + Interaction	SNH
3.	Equivalent Matrices	1	Blackboard + Interaction	SNH
4.	Elementary Matrix	1	Blackboard + Interaction	SNH
5.	Row reduced echelon form of a matrix	1	Blackboard + Interaction	SNH
6.	Rank of a matrix	1	Blackboard + Interaction	SNH
7.	Some important results	1	Blackboard + Lecture	SNH
8.	Rank of a matrix by row reduction	1	Blackboard + Interaction	SNH
9.	Normal form	1	Blackboard + Interaction	SNH
10.	Linear equations	1	Blackboard + Lecture	SNH
11.	Homogeneous system of linear equations	1	Blackboard + Lecture	SNH
12.	Non-homogeneous system of linear equations	1	Blackboard + Lecture	SNH
13.	Condition for consistency	1	Blackboard + Lecture	SNH

14.	Solution by Gauss elimination method	1	Blackboard +	SNH
15.	Eigen values and Eigen vectors		Lecture	
	SOUTH EIGHT VECTORS	1	Blackboard +	SNH
16.	Relationship between 5		Lecture	
	Relationship between Eigen values and Eigen vectors	1	Blackboard +	SNH
17.	Caley-Hamilton theorem		Lecture	31111
	oney Hamilton theorem	1	Blackboard +	SNH
18.	Application Problems		Lecture	31411
	A Prince digit Problems	1	Blackboard +	SNH
			Lecture	SINH
	Calculus L 24 Nove		Lecture	
1.	Calculus I -2(a) Differential calculus			
	Introduction and Recapitulation	1	Lookuma	
2.		1	Lecture +	PL
۷.	Higher derivatives	1	interaction	
3.	Coloubai	1	Blackboard +	PL
J.	Calculation of nth derivative	1	Lecture	
4.		1	Blackboard +	PL
4.	Leibniz's theorem	1	Lecture	
5.	D	1	Blackboard +	PL
٥.	Partial Differentiation	1	Lecture	
6.		1	Blackboard +	PL
о.	Higher order partial derivatives	1	Lecture	
7	Diff	7	Blackboard +	PL
7.	Differentiation of homogeneous function	1	Lecture Blackboard +	
0			Lecture	PL
8.	Euler's theorem on homogeneous function	1	Blackboard +	
_		_	Lecture	PL
9.	Extension of Euler's theorem	1	Blackboard +	
10		_	Lecture	PL
10.	Total differential	1	Blackboard +	PL
14			Lecture	PL
11.	Total derivative	1	Blackboard +	PL
			Lecture	PL
12.	Chain rule for functions of two independent	1	Blackboard +	PL
	variables with one independent parameter		Lecture +	7
			interaction	
13.	Chain rule for functions of three independent	1	Blackboard +	PL
	variables with one independent parameter		Lecture	, ,
			+interaction	
14.	Chain rule for functions of two independent	1	Blackboard +	PL
	variables with two independent parameter		Lecture	
			+interaction	

15.	Differentiation of implicit functions	1	Blackboard + Lecture	PL
16.	Jacobians	1	Blackboard + Lecture	PL
17.	Application Problems	1	Blackboard + Lecture	PL
	2(b) Integral Calculus			
1.	Introduction and Recapitulation	1	Lecture + interaction	KRP
2.	Reduction formulae for $\int sin^n x \ dx$	1	Blackboard + Lecture	KRP
3.	Reduction formulae for $\int cos^n x \ dx$	1	Blackboard + Lecture	KRP
4.	Reduction formulae for $\int tan^n x \ dx$	1	Blackboard + Lecture	KRP
5.	Reduction formulae for $\int cot^n x \ dx$	1	Blackboard + Lecture	KRP
6.	Reduction formulae for $\int sec^n x \ dx$	1	Blackboard + Lecture	KRP
7.	Reduction formulae for $\int cosec^n x \ dx$	1	Blackboard + Lecture	KRP
8.	Reduction formulae for $\int sin^m x cos^n x \ dx$	1	Blackboard + Lecture	KRP
9.	Differentiation under integral sign –Leibnitz rule	1	Blackboard + Lecture	KRP
	Geometry –Analytical Geometry of three dimension			
1.	Recapitulation	1	Lecture + interaction	LDN
2.	Angle Between two planes	1	Blackboard + Lecture	LDN
3.	Line of interaction of two planes	1	Blackboard + Lecture	LDN
4.	Planes co-axal with given planes	1	Blackboard + Lecture	LDN
5.	Planes bisecting the angle between two planes	1	Blackboard + Lecture	LDN
6.	Angle between a line and a plane	1	Blackboard + Lecture	LDN
7.	Co-planarity of two lines	1	Blackboard +	LDN

			Lecture	
8.	Shortest distance between skew lines	1	Blackboard +	LDN
			Lecture	
9.	Sphere	1	Blackboard +	LDN
10			Lecture	
10.	Equation of the tangent plane of the sphere	1	Blackboard +	LDN
11.	Anglo of interest		Lecture	
11.	Angle of intersection of two spheres	1	Blackboard +	LDN
12.	Condition of all		Lecture	
12.	Condition of orthogonality of two spheres	1	Blackboard +	LDN
13.	Right circular cone		Lecture	
	ment circular cone	1	Blackboard +	LDN
14.	Right circular additud		Lecture	
	Right circular cylinder	1	Blackboard +	LDN
	ASSIGNMENTS – Solving question bank and mod		Lecture	

SNH: PROF S N HONNAPPA = 18 HOURS

KRP: PROF PUSHPA K R = 09 HOURS

PL: PROF PUSHPALATHA A = 17 HOURS

LDN : DR. LATHA D N = 14 HOURS

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#### **PRACTICALS**

Total hours: 42

			Total hours : 42
Sl.No	Topic covered	No.of lecture hours	Methodology
1.	Introduction to Scilab and commands connected with matrices.	3	Blackboard + Lecture - Hands on key
2.	Computations with matrices	3	Blackboard + Lecture + Hands on key
3.	Row reduced echelon form and normal form.	3	Blackboard + Lecture + Hands on key
4.	Establishing consistency or otherwise and solving system of linear equations.	3	Blackboard + Lecture + Hands on key
5.	Introduction to Maxima and commands for derivatives and n <sub>th</sub> derivatives	3	Blackboard + Lecture + Hands on key
6.	Scilab and Maxima commands for plotting functions.	3	Blackboard + Lecture - Hands on key
7.	nº derivative without Leibnitz rule.	3	Blackboard + Lecture + Hands on key
8.	nº derivative with Leibnitz rule.	3	Blackboard + Lecture + Hands on key
9.	Obtaining partial derivative of some standard functions	3	Blackboard + Lecture + Hands on key
10.	Verification of Euler's theorem, its extension and Jacobian	3	Blackboard + Lecture + Hands on key
11.	Maxima commands for reduction formula with or without limits	3	Blackboard + Lecture + Hands on key
12.	Implementing vector form of line.	3	Blackboard + Lecture + Hands on key
13.	Implementing vector form of plane	3	Blackboard + Lecture + Hands on key
14.	REPETATION	3	Hands on key

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# Vivekananda Degree College

## Rajajinagar, Bangalore -55

# Department of Mathematics LESSON PLAN FOR THE ACADEMIC YEAR 2020-2021

Program: BSc

Course/Paper Name: Mathematic

Semester: Third Semester

Class: 3rd Year B.Sc.

Total Hours: 56

#### **THEORY**

CLAT	THEORY			
Sl.No	Topic covered	No.of lecture	Methodology	Initials
	Group Theory	hours		
1.	Introduction and Recapitulation	1	Lecture +	LDN
2.	Int I		interaction	LDN
	Integral powers of an element of group	1	Blackboard +	LDN
3.	Order of an element of a group	1	Lecture	
		1	Blackboard + Lecture	LDN
4.	Properties of Order of an element	1	Blackboard +	LDM
5.	Constitution		Lecture	LDN
٥.	Co-set decomposition of a group	1	Blackboard +	LDN
6.	Cyclic groups		Lecture	LDIV
	groups	1	Blackboard +	LDN
7.	Properties of Cyclic groups		Lecture	
		1	Blackboard +	LDN
8.	Index of a subgroup of groups	1	Lecture	
	<b>T</b>	1	Blackboard + Lecture	LDN
9.	Lagrange's theorem	1	Blackboard +	LDN
10.	Consequences of I		Lecture	LDN
10.	Consequences of Lagrange's theorem	1	Blackboard +	LDN
			Lecture	LDIV
	Sequence and series of Real numbers			
1.	Introduction and Recapitulation			1
		1	Lecture +	KRP
2.	Bounded sequences	1	interaction	
		1	Blackboard +	KRP
3.	Least upper bound (supremum) and greatest lower	1	Lecture Blackboard +	WD5
4.	board (infillium) of a sequence	_	Lecture	KRP
٦.	Limit of a sequences	1	Blackboard +	KRP

<ol> <li>convergent, divergent and oscillatory sequences</li> <li>Theorem of sequence</li> <li>Algebra of sequence</li> <li>Monotonic sequences and their properties</li> <li>Some standard sequence</li> <li>Cauchy's sequence</li> <li>Application problems</li> <li>Infinite series _introduction</li> </ol>	1 1 1 1 1 1 1 1	Blackboard + Lecture	KRP KRP KRP KRP
<ul> <li>7. Algebra of sequence</li> <li>8. Monotonic sequences and their properties</li> <li>9. Some standard sequence</li> <li>1. Cauchy's sequence</li> <li>1. Application problems</li> </ul>	1 1 1 1	Blackboard + Lecture Blackboard +	KRP KRP
8. Monotonic sequences and their properties 9. Some standard sequence 1. Cauchy's sequence 1. Application problems	1 1	Blackboard + Lecture Blackboard + Lecture Blackboard + Lecture Blackboard + Lecture	KRP
9. Some standard sequence 1. Application problems	1 1	Lecture  Blackboard + Lecture  Blackboard + Lecture  Blackboard + Lecture	KRP
9. Some standard sequence 1. Application problems	1	Lecture Blackboard + Lecture Blackboard + Lecture	KRP
O. Cauchy's sequence  Application problems	1	Blackboard + Lecture Blackboard + Lecture	
Application problems		Blackboard + Lecture	KRP
	1		
2. Infinite series _introduction	1	Blackboard +	KRP
	1	Blackboard +	SNH
. Behavior of an infinite series	1	Blackboard +	SNH
Series of positive terms	1	Blackboard +	SNH
Geometric series	1	Blackboard +	SNH
Test for convergence of series	1	Blackboard +	SNH
comparison tests	1	Blackboard +	SNH
The p- series or harmonic series	1	Blackboard +	SNH
D Alembert's test	1	Lecture Blackboard +	SNH
Raabe's test	1	Lecture Blackboard +	SNH
Cauchy's root Test		Lecture	
Alternating series - Leibnitz toot		Lecture	SNH
	1	Blackboard + Lecture	SNH
	1	Blackboard +	SNH
' Alembert test for absolute convergence	1	Blackboard +	SNH
ummation of binomial series	2	Lecture Blackboard +	KRP
	Series of positive terms  Geometric series  Test for convergence of series  comparison tests  The p- series or harmonic series  D Alembert's test  Raabe's test  Cauchy's root Test  Alternating series - Leibnitz test  absolute and conditional convergence  'Alembert test for absolute convergence	Series of positive terms  1  Geometric series  1  Test for convergence of series  1  comparison tests  1  The p- series or harmonic series  1  D Alembert's test  1  Raabe's test  1  Cauchy's root Test  Alternating series - Leibnitz test  1  Alternating series - Leibnitz test  1  Immation of binomial series	Series of positive terms  1 Blackboard + Lecture  Geometric series  1 Blackboard + Lecture  Test for convergence of series  1 Blackboard + Lecture  comparison tests  1 Blackboard + Lecture  The p- series or harmonic series  1 Blackboard + Lecture  D Alembert's test  1 Blackboard + Lecture  Raabe's test  1 Blackboard + Lecture  Cauchy's root Test  1 Blackboard + Lecture  Alternating series - Leibnitz test  1 Blackboard + Lecture  Alternating series - Leibnitz test  1 Blackboard + Lecture  Alternating series - Leibnitz test  1 Blackboard + Lecture  Blackboard + Lecture  Alternating series - Leibnitz test  1 Blackboard + Lecture  Blackboard + Lecture  Alternation of binomial series

26.	Summation of exponential series	2	Blackboard + Lecture	KRP
27.	Summation of logarithmic series	2		KDD
	o regarithmic series	2	Blackboard + Lecture	KRP
28.	Application problems	2	Blackboard +	KRP
			Lecture	KNF
	Differential Calculus			
1.				
4.	Introduction and Recapitulation	1	Lecture +	PL
			interaction	-
2.	Limit of a function in ε-δ form	2	Disable	
			Blackboard +	PL
3.	Limit of real valued function	1	Interaction	
		1	Blackboard +	PL
4.	Left and right hand limit	1	Interaction	
		1	Blackboard +	PL
5.	Limits at infinity	2	Interaction	
		2	Blackboard +	PL
6.	Uniqueness of limit of a function	2	Interaction	
		2	Blackboard +	PL
7.	Bounds of a function	2	Interaction	
		2	Blackboard +	PL
8.	Least upper bound (supremum) and greatest lower	1	Interaction	
	bound (infimum)	1	Blackboard +	PL
9.	Algebra of limits	1	Interaction	
		1	Blackboard +	PL
10.	Continuity	1	Interaction	
		1	Blackboard +	PL
11.	Discontinuity of a function	1	Interaction Blackboard +	
		1		PL
12.	Algebra of Continuity	1	Interaction	
		1	Blackboard +	PL
13.	Theorem of Continuity	1	Interaction	
	,	1	Blackboard +	PL
14.	Differentiability	1	Interaction	
	,	1	Blackboard +	PL
15.	Mean Value Theorem	1	Interaction	
		1	Blackboard +	PL
16.	Rolle's Theorem	4	Interaction	
	The striction	1	Blackboard +	PL
17.	Geometrical interpretation of Rolle's Theorem	-	Interaction	
1/.	Geometrical interpretation of Rolle's Theorem	1	Blackboard +	PL

18.	Lagrange's Mean Value Theorem (First Mean Value Theorem)	1	Blackboard + Interaction	PL
19.	Cauchy's Mean Value Theorem	1	Blackboard + Interaction	PL
20.	Taylors theorem	1	Blackboard + Interaction	PL
21.	Problems on Taylors series expansion	1	Blackboard + Interaction	PL
22.	Problems on McLaurin's Theorem and series expansion	1	Blackboard + Interaction	PL
23.	Evaluation of limits by L' Hospital's rule	1	Blackboard + Interaction	PL
24.	Type 1 Evaluation of limits of form $\frac{0}{0}$	1	Blackboard + Interaction	PL
25.	Type 2 Evaluation of limits of form $\frac{\infty}{\infty}$	1	Blackboard + Interaction	PL
26.	Type 3 Evaluation of limits of form $0 \times \infty$ , $\infty - \infty$	1	Blackboard + Interaction	PL
27.	Type 4 Evaluation of limits of form $0^0, \infty^0, 1^\infty$	1	Blackboard + Interaction	PL
	ASSIGNMENTS – Solving question bank and model q	uestion p	papers	

SNH: PROF S N HONNAPPA = 13 HOURS

KRP: PROF PUSHPA K R = 19 HOURS

PL: PROF PUSHPALATHA A = 31 HOURS

LDN: DR. LATHA D N = 10 HOURS

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### **PRACTICALS**

**Total hours: 36** 

		ı	otal hours: 36
Sl.No	Topic covered	No.of lecture hours	Methodology
1.	Examples to verify Lagrange's theorem	3	Blackboard + Lecture + Hands on key
2.	Examples for finding left and right coset and finding the index of a group.	3	Blackboard + Lecture + Hands
3.	Illustration of convergent, divergent and oscillatory sequences using Scilab/Maxima.	3	on key  Blackboard +  Lecture + Hands  on key
4.	Illustration of convergent, divergent and oscillatory series using Scilab/Maxima.	3	Blackboard + Lecture + Hands
5.	Using Cauchy's criterion on the sequence of partial sums of the series to Determine convergence of a series.	3	on key  Blackboard +  Lecture + Hands  on key
6.	Testing the convergence of binomial, exponential and logarithmic series and finding the sum.	3	Blackboard + Lecture + Hands on key
7.	Scilab/Maxima programs to illustrate continuity of a function.	3	Blackboard + Lecture + Hands
8.	Scilab/Maxima programs to illustrate differentiability of a function and unequal left hand and right hand limits for discontinuous functions.	3	on key Blackboard + Lecture + Hands on key
9.	Scilab/Maxima programs to verify Rolle's theorem and Lagrange's theorem.	3	Blackboard + Lecture + Hands on key
10.	Scilab/Maxima programs to verify Cauchy's mean value theorem and finding Taylor's theorem for a given function.	3	Blackboard + Lecture + Hands
11.	Evaluation of limits by L'Hospital's rule using Scilab/Maxima.	3	on key  Blackboard + Lecture + Hands
12.	REPETATION		on key

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# Vivekananda Degree College

Rajajinagar, Bangalore -55

# Department of Mathematics LESSON PLAN FOR THE ACADEMIC YEAR 2020-2021

Program: BSc

Course/Paper Name: Mathematic

Semester: Fifth Semester

Class: 5th Year B.Sc.

Paper V

**THEORY** 

Total Hours: 42

Sl.No	Topic covered	No.of lecture hours	Methodology	Initials
	Algebra IV Rings, Integral Domains, Fields			,
1.	Introduction and Recapitulation	1	Lecture + interaction	KRP
2.	Rings	1	Blackboard+ Interaction	KRP
3.	Some special types Rings	1	Blackboard+ Interaction	KRP
4.	Elementary Properties of Rings	1	Blackboard+ Interaction	KRP
5.	Subrings	1	Blackboard+ Interaction	KRP
6.	Results on Subrings of a ring	1	Blackboard+ Interaction	KRP
7.	Ideals	1	Blackboard+ Interaction	KRP
8.	Standard properties of Ideals	1	Blackboard+ Interaction	KRP
9.	Homomorphism of rings	1	Blackboard+ Interaction	KRP
10.	Properties of Homomorphism	1	Blackboard+ Interaction	KRP
11.	Isomorphism	1	Blackboard+ Interaction	KRP
12.	Properties of Isomorphism	1	Blackboard+ Interaction	KRP
13.	Quotient rings	1	Blackboard+ Interaction	KRP

	CALCULUS – V Differential Calculus Of Sca	1	Lecture +	SNH
	Introduction and Recapitulation	1	interaction	
	Introduction and	1	Blackboard+	SNH
2.	Scalar Field	1	Interaction	
۷.			Blackboard+	SNH
3.	Gradient of a Scalar field	1	Interaction	3
		4	Blackboard+	SNH
4.	Geometrical Meaning	1	Interaction	31411
			Blackboard+	SNH
5.	Directional derivative	1	-2 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	SIVIT
		4	Interaction	CALL
6.	Maximum Directional derivative	1	Blackboard+	SNH
	4 1 1		Interaction	
7.	Angle between 2 surface	1	Blackboard+	SNH
8.	Divergence and Coult of control Call		Interaction	
5.	Divergence and Curl of vector field	1	Blackboard+	SNH
9.	Solenoidal and irrotational fields		Interaction	
٥.	Soleholdar and irrotational fields	1.	Blackboard+	SNH
10.	Scalar and Vector potentials		Interaction	
	sound and vector potentials	1	Blackboard+	SNH
1.	Laplacian of a scalar field	4	Interaction	
		1	Blackboard+	SNH
2.	Vector identities	-	Interaction	
		1	Blackboard+	SNH
3.	Standard properties		Interaction	
	1 1	1	Blackboard+	SNH
4.	Harmonic function		Interaction	
		1	Blackboard+	SNH
5.	Application Problems		Interaction	
		1	Blackboard+	SNH
			Interaction	
	NUMERICAL METHODS – I			
	Introduction and Recapitulation			
	and necapitaliation	1	Lecture +	LDN
	Finite differences		interaction	
		1	Blackboard+	LDN
	Fundamental difference of finite difference		Interaction	LDN
	difference of finite difference	1	Blackboard+	LDM
	Backward difference operator $\nabla$		Interaction	LDN
	and difference operator $\nabla$	1	Blackboard+	15
	Relation Between the operators		Interaction	LDN
	between the operators	1		
		1	Blackboard+ Interaction	LDN

6.	Factorial notations	1	Blackboard+ Interaction	LDN
7.	Separation of symbols	1	Blackboard+ Interaction	LDN
8.	Interpolation	1	Blackboard+ Interaction	LDN
9.	Interpolation with equal intervals	1	Blackboard+ Interaction	LDN
10.	Interpolation with unequal intervals	1	Blackboard+ Interaction	LDN
11.	The concept of divided difference	1	Blackboard+ Interaction	LDN
12.	Newton's General divided difference Formula	1	Blackboard+ Interaction	LDN
13.	Inverse interpolation	1	Blackboard+ Interaction	LDN
14.	Numerical Integration	1	Blackboard+ Interaction	LDN
15.	General Quadrature formula for equidistance ordinates:	1	Blackboard+ Interaction	LDN
16.	<ul><li>i. Trapezoidal rule</li><li>ii. Simpson's 1/3 rule</li><li>iii. Simpson's 3/8 rule</li></ul>	3	Blackboard+ Interaction	LDN
	ASSIGNMENTS - Solving question bank and mode	I question	papers	

SNH: PROF S N HONNAPPA = 15 HOURS

KRP: PROF PUSHPA K R = 13 HOURS

LDN: DR. LATHA D N = 18 HOURS

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### **PRACTICALS**

Total hours: 33

		Total hours: 33		
Sl.No	Topic covered	No.of lecture hours	Methodology	
1.	Examples on different types of rings.	3	Blackboard + Lecture + Hands or key	
2.	Examples on integral domains and fields.	3	Blackboard + Lecture + Hands or key	
3.	Examples on subrings, ideals and subrings which are not ideals.	3	Blackboard + Lecture + Hands or key	
4.	Homomorphism and isomorphism of rings- illustrative examples.	3	Blackboard + Lecture + Hands or key	
5.	To demonstrate the physical interpretation of gradient, divergence and curl.	3	Blackboard + Lecture + Hands or key	
6.	Writing gradient, divergence, curl and Laplacian in cylindrical and spherical coordinates.	3	Blackboard + Lecture + Hands or key	
7.	Scilab/Maxima programs on Interpolations with equal intervals.	3	Blackboard + Lecture + Hands or key	
8.	Scilab/Maxima programs on Interpolations with unequal intervals.	3	Blackboard + Lecture + Hands or key	
9.	Scilab/Maxima programs to evaluate integrals using Simpson's $\frac{1}{3}$ rule.	3	Blackboard + Lecture + Hands or key	
10.	Scilab/Maxima programs to evaluate integrals using Simpson's $\frac{3}{8}$ th rule.	3	Blackboard + Lecture + Hands on key	
11.	REPETATION	3	Hands on key	

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# Paper VI

	THEORY		Total Hours	42
	THEORY		The second secon	Initials
Sl.No	Topic covered	No.of lecture hours	Methodology	miliars
	MATHEMATICAL METHODS - II Calo	culus Of Variatio	n	
1.	Introduction and Recapitulation	1	Lecture + interaction	SNH
2.	Functional	1	Blackboard+ Interaction	SNH
3.	Variation of a function $f = f(x, y, y')$	1	Blackboard+ Interaction	SNH
4.	Properties	1	Blackboard+ Interaction	SNH
5.	Euler's equation	1	Blackboard+ Interaction	SNH
6.	Particular forms of Euler's equation	1	Blackboard+ Interaction	SNH
7.	Application of Calculus of variation	1	Blackboard+ Interaction	SNH
8.	Isoperimetric problems	1	Blackboard+ Interaction	SNH
	CALCULUS – VI a). Line And Multiple I Introduction and Recapitulation	ntegrals 1	Lecture +	PL
1.		1	interaction Blackboard+	PL
2.	Line integral over plane curves	1	Interaction Blackboard+	PL
3.	Basic properties of line integrals	1	Interaction Blackboard+	PL
4.	Line integral over space curves		Interaction Blackboard+	PL
5.	Independent of paths	1	Interaction	PL
6.	Definition of double integral	1	Blackboard+ Interaction	PL
7.	Evaluation of double integral	1	Blackboard+ Interaction	
8.	Change of order of integration	1	Blackboard+ Interaction	PL
-			Blackboard+	PL

		1	Blackboard+ Interaction	
	L'a polar form		Interaction	PL
10.	Double integral in polar form	1	Blackboard+	
10.	Application of double integral to find Area and		Interaction	PL
11.	Application of double integ	1	Blackboard+	
	Volume Galone areas		Interaction	PL
12.	Computation of plane areas	1	Blackboard+	, -
	ion form		Interaction	PL
13.	Area in Cartesian form	1	Blackboard+	-
	. Palar form		Interaction	PL
14.	Area in Polar form	1	Blackboard+	F L
	Computation of surface areas		Interaction	PL
15.	Computation of surface	1	Blackboard+	PL
	Volume underneath a surface	_	Interaction	PL
16.		1	Blackboard+	PL
	Volume of revolution using double integrals		Interaction	PL
17.	Volume	1	Blackboard+	PL
18.	Triple integral		Interaction	PL
		1	Blackboard+	PL
19.	Change of variables in Triple integral		Interaction	PL
		1	Blackboard+	PL
20.	Triple integral in cylindrical Polar form  Triple integral in spherical Polar form	1	Interaction	PL
			Blackboard+	'
21.			Interaction	PL
22	Computation of volume by triple integral	1	Blackboard+ Interaction	' -
22.	Computation		Interaction	
	b) Integral Theorems	1	Lecture +	KRP
1.	Introduction and Recapitulation	1	interaction	100
		1	Blackboard+	KRP
2.	Green's theorem	1	Interaction	
_	Proof of Green's theorem	1	Blackboard+	KRP
3.	Proof of Orech's medicin		Interaction	
4.	Extension of Green's theorem	1	Blackboard+	KRP
	LATERISION OF GIVEN 5 MICOTOM		Interaction	
5.	The Gauss Divergence theorem	2	Blackboard+	KRP
			Interaction	
6.	Stokes'theorem	2	Blackboard+	KRP
			Interaction	
	ASSIGNMENTS – Solving question bank and model of	question pa	pers	

SNH: PROF S N HONNAPPA = 08 HOURS

KRP: PROF PUSHPA K R = 08 HOURS

PL: PROF PUSHPALATHA A = 22 HOURS

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