



MUGBERIA GANGADHAR MAHAVIDYALAYA

P.O.—BHUPATINAGAR, Dist.—PURBA MEDINIPUR, PIN.—721425, WEST BENGAL, INDIA

NAAC Re-Accredited B+Level Govt. aided College

CPE (Under UGC XII Plan) & NCTE Approved Institutions

DBT Star College Scheme Award Recipient

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Teachers Diary of Mathematics Department for Academic Year 2018-2019

3. Detailed Syllabus (A) First Term

From July - 2018 To December - 2018
and January - 2019 to June - 2019

B.Sc. - I Semester (July-18 - Dec-18)

Course type	Course Code	Name of the Course	Total Class hrs/Week
CC	BMH/CC02	Def ⁿ of Relation, Composition of relations, Equivalence relation, Def ⁿ of Class, Partial order relation, Mapping, various type of Mapping, Restriction of a Mapping, Composition of Mapping, Inverse Mapping, Direct and inverse image, Permutation, Equipotent Sets, Enumerable Sets, Mathematical induction, GCD and LCM of more than two numbers, Divisibility,	2

B.Sc. - II - Semester (Janu-19 - June-19)

Course type	Course Code	Name of the Course	Total Class hrs/Week
		Def ⁿ of Sequence, Bounded Sequence, Limit of a Sequence, Convergent Sequence, Limit theorem, Sandwich theorem, Null sequence, Divergent Sequence, Monotone Sequence, Cantor's theorem on nested intervals, Subsequence, Subsequential limit, Bolzano-Weierstrass theorem, Cauchy's general principle of convergence, Cauchy sequence, Cauchy theorem on limits, Def ⁿ of Series, Geometric Series, Harmonic Series, Series of reals, Limit form, Comparison test, D'Alembert's ratio test, Cauchy's root test, Cauchy's Condensation test, Ratio test, Logarithm test, Gauss's test, Abel's theorem, Leibniz's test, Dirichlet's test, Conditionally Convergent, Riemann's theorem, Abel's theorem	4

B.Sc. - III Semester (July-18 - Dec-18)

Course type	Course Code	Name of the Course	Total Class hrs/Week
		Def ⁿ of Group, Groupoid, Semigroup, Monoid, Quasigroup, Cancellation law, Finite group, Symmetric group, Klein's 4-group, order of an element, Subgroup, Centre of a group, Cyclic group, Cosets, Lagrange theorem, Fermat theorem, Normal Subgroup, Test for normality, Quotient group Homomorphism, monomorphism, epimorphism, isomorphism	1

Principal
Mugheria Gangadhar Mahavidyalaya
19.07.18

B.Sc. - II Semester (Jan-19 - June-19)			
Course type	Course Code	Name of the Course	Total Class hrs/week
		Def ⁿ of Ring, various type of Ring, zero Ring, Trivial Ring, Division of zero, characteristic of a Ring, integral domain, skew field, Field, w/ non the elem, Subring, subfield, Ideals of a Ring, Principle Ideal Ring, Prime Ideal Ring, Quotient Ring, Homomorphism of Ring, monomorphism, epimorphism, isomorphism,	4

B.Sc. - III Year (July-18 - June-19)

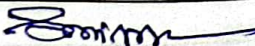
Rigid Dynamics: - Moment and product of inertia, M.I about Parallel axes, D'Alembert's principle, Equatⁿ of motion from D'Alembert's principle, Motion about a fixed axis, Compound Pendulum, Simple equivalent pendulum, Motion in two dimension under finite force.

B.Sc. - I Semester (General) (July-18 - Dec-18)

Differential Equation: - Defⁿ of differential equation, Formation of an differential equation, degree, order of D.E, First order First degree differential equation, Linear differential equation, homogeneous differential equation, Separation of variables, Bernoulli's differential equation,

B.Sc. - II Semester (General) (Jan-19 - June-19)

Abstract Algebra: - Defⁿ of Relation, Equivalence relation, Mapping, various type of Mapping, Composition of two mapping, inverse mapping, Groupoid, Semigroup, Monoid, Group, Subgroup.



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19.07.18

IV. DIARY

Date week ending	FORECAST	Amount Taught
	Semester-I	
	* In my first class, I introduced	
16.07.2018-	to every one about their names,	
18.07.2018	Previous school etc., Then I told	Basic Concept
	them about their syllabus, difference	of relation.
	kind of reference book and introduce	
	about my topics and give their	
	general concept of Relation	
	* Discuss about their syllabus and	
	I enquire about your previous	About
	Exam, difference kind of reference	Binary operation
	book and give the concept of Binary	
	operation.	
	* Discuss about their syllabus and	
	I enquire about their previous Exam and	known about
	diff. kind of ref. book on Rigid Dynamics	their syllabus
	* Introduce all of them with me	
	and enquire for your their biodata	
	and know to them about their	
	syllabus and difference kind of	know about
	ref. book and give some idea	Basic concept
	about Differential Equation	of Differential
		Equation.
Date	Home task for the week	
	1. $A = \{2, 3, 5, 6\}$ and $B = \{8, 10, 13, 20\}$ and P is defined	
	by $P = \{(x, y) : x \text{ is divisible by } y\}$ Find P in	
	order pair.	
	2. What is diff. Equ?	
	3. What is binary operation?	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Semester-I (Relation)	The first class is full of Student and student body language is very positive because of their first collage day.	G.S. 19/07/18
Semester-II (Binary operation)	Some of the Student is poor for his study so they can not understand my topics but other would be understanding my topics sincerely.	
III Year (Rigid Dynamics)	The III-Year Students are very intelligent for their study.	
Sem-I (G.E.) (Differential Equation)	All students are present in the class for their first class of College.	

IV. DIARY

Date week ending	FORECAST	Amount Taught
	* In this week, I defined the various type of relation such as Reflexive, Symmetric, Transitive and equivalence relation. Also I solve the worked Example related to the Equivalence relation.	known about Equivalence Relation
23.07.2018 - 25.07.2018		
	* In this week, I discuss about Composition table, Groupoid, Semigroup, Monoid and Quasi group and also solve the various problem about binary composition.	known about Groupoid, Semigroup, Monoid, Quasigroup and binary composition
	* In this week, I defined M.I, Radius of gyration, Product of inertia, and some standard result of M.I and Moment of inertia about parallel axes.	known about M.I about parallel axes.
	* In this week I defined about the formation of ordinary differential equation and order and degree of an ordinary differential equation on Maity Ghosh Book.	Formation of O.D.E, order, degree of diff. eqn.
	* I defined the Law of State of drugair, the First law of T.D. Change in E. energy	known about First Law of T. D
Date	Home task for the week	
	1. A relation P is defined on the set Z by ' aPb iff $a-b$ is divisible by 5^4 ' $\forall a, b \in Z$. Examine if P is equivalence relation on Z .	
	2. Define a binary composition $\circ$ on Z by $a \circ b = a + b - ab$ $\forall a, b \in Z$, Show that $(Z, \circ)$ is a Monoid.	

IV. DIARY

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IV. DIARY

Date week ending	FORECAST	Amount Taught
30.07.18-01.08.18	* In this week I defined about the p -equivalence and the theorem related to p -equivalence classes. Such theorem as 1.8.1, 1.8.2, 1.8.3 in the book of S.K. Mapa.	Known about p -equivalence classes theorem
	* I defined the def ⁿ of group and teach the theorem 2.7.1, 2.7.2, 2.7.3 and 2.7.4 and 2.7.5	Known about the theorem related to semigroup-monoid
	* In this week I defined a theorem about M.I and P.I in the book of N.T. Sharma and solve the various type of Mathematical problem.	Known about M.I, P.I and related theorem.
	* In this week I defined about the solution of differential equation and solve the various type of Differential Equation.	Known about the solution of diff. Equation.
	* In this week, I defined about adiabatic process, Poisson's equation, hydrostatic equation, adiabatic temperature change with height, the variation of pressure with altitude. When T is constant, T -decreased at a constant rate with increasing z .	Known about adiabatic process, hydrostatic eqn etc.
Date	Home task for the week	
	1. Find the equivalence classes determined by the equivalence relation ρ on $\mathbb{Z}$ defined by ' $a \rho b$ iff $a-b$ is divisible by n ' $\forall a, b \in \mathbb{Z}$.	
	2. Define a binary composition $*$ on the set $\mathbb{Z} \times \mathbb{Z}$ by $(a, b) * (c, d) = (a+c, a+d)$, $(a, b), (c, d) \in \mathbb{Z} \times \mathbb{Z}$. Prove that $(\mathbb{Z} \times \mathbb{Z}, *)$ is a semigroup but not a monoid.	

IV. DIARY

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IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week, I defined the theorem 1.8.4 in S.K. Mapa's Book and solve the example on Equivalence classes and	Known about Partial orders, relation, Poset etc.
06.08.18 - 08.08.18	I also talk them about Partial order relation, Poset etc.	
	In this week, I discuss about the theorem 2-7-6, 2-7-7 in S.K. Mapa's Book, also defined the alternative definition of group and defined the theorem 2-7-8.	Known about Group and related their theorem
	I solve the problem related to area of Circle, cylinder, cone and the shape of the solid formed by the revolution of the cardioid $r = a(1 + \cos \theta)$	Known about various problem related to M-D and P.I
	In this week, I solved the various problem of differential Equation related to one order, degree and geometrical problem about formation of diff. Eqn.	Known about order degree and geometric problem of Diff. Eqn.
	In this week, I defined about effect of water vapour, virtual temperature, Determination of altitude.	Known about effect of water vapour and virtual temperature
Date	Home task for the week	
	1. Let $(S, \leq)$ be a poset. Define a relation $\succ$ on S by " $a \succ b$ iff $b \leq a$ ", $\forall a, b \in S$. Show that $(S, \succ)$ is a poset.	
	1. If S be the set of all 2×2 non-singular matrices whose elements are real number. Show that S forms a non-commutative group under matrix multiplication.	

IV. DIARY

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IV. DIARY

Date week ending	FORECAST	Amount Taught
	* In this week I solve the Exercises	Known about Mapping
	- 2 of S.K. Mapa's book and give	and some self
13.08.18 -	them the basic idea about Mapping	about mapping
14.08.18	Image of mapping, Pre-image of mapping	
	Domain and Co-domain of Mapping, Range	
	of mapping etc.	
	* In this week, I solve the	Known about
	various type of worked example	various example
	of Page-78 and Page-79 in S.K. Mapa's	related to group
	book and give us the home task	thereby
	as Exercises - 8 in S.K. Mapa's	
	Book.	
	* In this week, I solve the problem	Known about
	about M.I of oval ellipse and defined	Momental Ellipsoid
	about Momental Ellipsoid and	and related problem.
	related problem in Momental Ellipsoid.	
	* In this week, I talk off of the	Known about
	Student about First order and	First order first
	First degree diff. Eqn and	degree diff Equation
	the process of solving the eqn.	
	* In this week, I defined Geo-potential	Known about Geo
	altitude, Potential temperature,	Potential tem, potenti
	adiabatic lapse rate in terms of potential	tem, adiabatic lapse
	temperature.	rate.
Date	Home task for the week	
	1. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = \sin x$, $x \in \mathbb{R}$.	
	Find the Image and pre-Image set of	
	f .	
	2. Let $(S, \circ)$ be a Semi group. If for $x, y \in S$,	
	$x \circ y = y = y \circ x$ Prove that $(S, \circ)$ is an	
	abelian group.	
	3. Let $(G, \circ)$ be a group and $a \in G$. Prove that $a^2 \in Z_G$.	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem-I (Mapping)	Most of the student give their feedback very smartly.	
Sem-III (Group theory)	All of them are very serious for their lesson.	
Year - III (Rigid Dynamics)	All of them are very intelligent for their lesson.	
Sem-I (GBI) (Differential Equation)	Some of them are very poor.	
P-G-II (Meteorology)	They are very serious for their study.	
		 20.8.2018 Principal Mugberia Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week, I defined about various type of mapping such as one-one, Many-one, into, onto mapping and defined the process how they are mapping	Known about various type of mapping
20.08.18 22.08.18	is injective or not and surjective or not and bijective or not	
	* In this week, I defined a finite group and theorem about 2-8.1 in S.K. Mapa's Book and also solved Example 1, 2 and 3, 4, 5 and 6 in S.K. Mapa's Book.	Known about finite groups and Example related to this.
	* In this week, I solved the problem about Cube, hemisphere related to the momental Ellipsoid in H.T. Sharma's Book,	Known about various problem about cube hemisphere on the momental Ellipsoid
	⊙ In two week I solve the differential Eqn ⁿ by separation of variable, homogeneous differential equation and related geometrical problem of differential Equation.	Known about homogeneous diff. Eqn ⁿ
	* In this week, I defined about humidity variables such as mixing ratio, specific humidity, absolute humidity, relative humidity.	Known about humidity variable
Date	Home task for the week	
	1. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 3x + 1$, $x \in \mathbb{R}$. Examine if f is i) injective ii) surjective	
	2. Let $S = \{z \in \mathbb{C}: z^n = 1\}$, S is the set of n distinct n -th root of unity. Then $(S, \cdot)$ is an abelian group.	
	3. Solve: $(x^2 + y^2) dx = (xy + x^2) dy$	
	4. Solve: $(x^2 + 2xy + 2y^2) dy = (x^2y + y^3) dx$	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - I (Mapping)	All of them are now very serious for their lesson.	
Sem - III (Group Theory)	Most of them are very good in learning.	
Year - IV (Rigid Dynamics)	They are very good in study.	
Sem - I (GSI) (Differential Equation)	Some of them are very poor by most of them are very good.	
P. G. - IV (Meteorology)	They are very serious for their lesson.	

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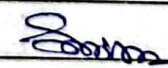
25/8/2018

Principal
Mugberia Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week, I defined Equality of two mapping, Composition of mapping and to teach the theorem 1.11.1, 1.11.2	Known about Composition of mapping and related
27-08-18	1.11.3, 1.11.4, 1.11.5 and 1.11.6 in S.K.	their theorem
29-08-18	Mapa's book.	
	* In this week, I defined symmetric group S_n , S_3 , Klein's 4-group and integral power of an element, order of an element and solve problem related to the above.	Known about symmetric group Klein's 4-group and related problem
	* In this week I solved the problem about momental Ellipsoid in the base of solid cone, uniform triangular lamina etc.	Solve various problem about M. Ellipsoid in the base of cone, + triangular lamina
	* In this week, I defined about linear differential equation of x and y and solve the various problem about linear diff ⁿ equation in the book of Maity, Ghosh.	Known about linear diff ⁿ Eqn
	* In this week, I defined about the eqn of state of moist unsaturated air, the adiabatic lapse rate for moist unsaturated air	Known about eqn of state, adiabatic lapse rate
Date	Home task for the week	
	1. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = x+1$ and $g: \mathbb{R} \rightarrow \mathbb{R}$ defined by $g(x) = x+5$, $x \in \mathbb{R}$. Hence find $g \circ f$ and $f \circ g$.	
	2. $\frac{dy}{dx} + xy = (x^2+1)$	
	3. $\frac{dy}{dx} + (2x+1)y = e^{\tan^{-1}x}$	
	4. What is Integrating Factor.	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - I (Mapping)	Most of them are very serious for hearing my speech.	
Sem - III (Group Theme)	They are very serious for their lesson.	
Year - IV (Rigid dynamics)	They are very intelligent as a student.	
Sem - I (GDI) (differential Equations)	Some of them are very weak.	
P.G. - IV (Meteorology)	They are very serious for their lesson.	
		 29.08.2018 Principal Mugberia Gangadhar Mahavidyalaya

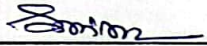
S. S. S.
29.08.2018
Principal
Mugberla Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week I defined the Inverse mapping and related their theorem,	Known about Inverse mapping
04.09.18	and defined the Direct and Inverse Image of mapping	and related their theorem.
05.09.18	and solve the various type of problem related to Inverse mapping	
	I teach all of the student about the theorem 2.10.1, 2.10.2, and various type of mathematical problem solved in Sk. Maths Book	Known about many theorem related to group
	In this week I defined various type of theorem about length of principle axis of material system and solved various type of problem related to the above in the case of semicircular wire, quadrants of an ellipse.	Known about principle axis and various problem about this.
	In this week I defined about Bernoulli's equation in x and y of differential Equation and solve the various problem about above.	Known about Bernoulli's diff Eqn.
	I defined the stereological diagram, Area Bivalence, Tephigram and various cases.	Known about various diagram
Date	Home task for the week	
	1. Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 3x+1$, $x \in \mathbb{R}$, Prove that f is invertible and find f^{-1}	
	2. In a group $(G, \circ)$ the elements a and b commute and $o(a)$ and $o(b)$ are prime to each other. Show that $o(ab) = o(a) \cdot o(b)$.	
	3. $\frac{1}{y} \frac{dy}{dx} + 2x = (x^2+1)$. Solve this.	

IV. DIARY

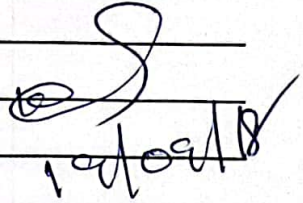
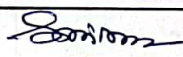
Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem-I		
(Mapping)	Most of them are good catching power but some of them are not good.	
Sem-III		
(Group theory)	They are very good in their lesson.	
Year-IV		
(Rigid dynamics)	They are so intelligent	02/09/18
Sem-I (GBI)		
(differentiation)	Some of them are very poor.	
Examination)		
P.G-IV		
(Meteorology)	They are very serious for their lesson.	


 7-09-2018
 Principal
 Mugberia Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week I Solve the	
	various problem about Mathematical	Known about
17.09.18	induction and teach about	Mathematical
19-09-18	number system such as L.C.M, G.C.D, Divisibility of numbers and	induction..
	Solve various type of mathematical	
	problem related to M.I and	
	number system.	
	In this week, I defined about	Known about Centre
	the theorem 2-11.5, 2-11.6, 2-11.7	of group, centralizer
	and defined Centre of a group, centralizer	of an element.
	of an element and solved the various	
	type of problem related to the	
	above.	
	In this week, I defined I improved	Known about
	forces, effective forces, D'Alembert's	Centre of inertia,
	principle, equation of motion of	motion relative to
	rigid body, motion of the centre of	the centre of inertia
	inertia, motion relative to the Centre	
	of inertia.	
	In this week I take an Examination	Internal
	on the basis of diff. equation.	Examination
	I defined Centrifugal force, Coriolis	Known about various
	force, relation between inertial and non-	force.
	inertial frame.	
Date	Home task for the week	
	1. Find the L.C.M and G.C.D of	234, 324, 422
	2. Let $(G, 0)$ be an abelian group and n be a	
	fixed +ve integer. Let $H = \{a^n : a \in G\}$. Prove	
	that $(H, 0)$ is a Subgroup of $(G, 0)$	
	3. Show the the no. of generator of the cyclic	
	group $(S, 0)$ where $S = \{1, i, -1, -i\}$ is 2.	

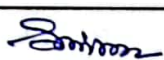
IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - I (Number System)	Now All of them are very serious for their study.	
Sem - III (Group Theory)	they are all very serious and good.	
Year - III (Rigid Dynamics)	They are so Intelligent.	
Sem - I (G.EI) (Differential Equation)	Some of them are poor.	
P.G - III (Meteorology)	They are very serious in their lesson.	 19.09.2018 Principal Mugheria Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week I defined the	
	equipotent sets, transfinite	known about
24.09.18-	Cardinal number, Enumerable	Enumerable set,
26.09.18	sets, Countable set and Countably	equipotent set
	infinite set etc.	Countable set
	In this week I defined	
	Cyclic group and defined	
	the theorem 2.12.1, 2.12.2,	known about
	2.12.3, 2.12.4 and 2.12.5	Cyclic group.
	and solved various problem	
	related this.	
	In this week I solve the	known about
	various problem about	various type of
	D'Alembert's principle and	problem related
	equation of motion of a	to D'Alembert's
	rigid body.	principle.
	In this week this week	
	I solved the various type	known about
	of problem in differential	the diff. Eqn
	equation of the form	of the form
	$\frac{dy}{dx} = f(ax+by+c)$	$\frac{dy}{dx} = f(ax+by+c)$
Date	Home task for the week	
	1. Prove that the set of all positive	positive
	rational numbers is enumerable.	
	2. Prove that the set of all rational	rational
	number is enumerable.	
	3. Prove that $(\mathbb{Q}, +)$ is a non cyclic group.	
	Reduce that the group $(\mathbb{R}, +)$ is non	
	cyclic. 4. Solve: $\frac{dy}{dx} = 2x+y+1$	

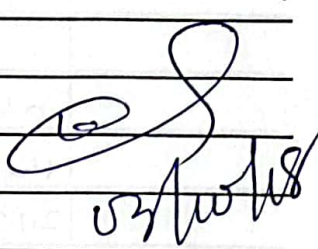
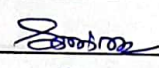
IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - I (Self theory)	Most of the student are careful to their lesson and hearing my speech carefully.	
Sem - III (Group theory)	All student are hearing my speech carefully.	
Year - III (Rigid dynamics)	Most of them are not present in the class.	
(Sem - I (G61) (Differential Equation)	Some of them are not good for their lesson.	
		 26.09.2018 Principal Mugberia Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week I defined	
01.10.18 -	the theorem "An Infinite Subset	Known about
03.10.18	of an enumerable set is	the theorem
	enumerable and Corollary	related enumerable
	of the theorem and solved	set.
	the various type of problem	
	related this.	
	In this week I defined	
	about the theorem 2-12.6, 2-12.7,	Known about the
	2-12.8, 2-12.9, 2-12.10 and	theorem related
	Solve the various type of	to Cyclic group.
	problem related to these	
	theorem.	
	In this week I solved	Known the
	the worked Example	various example
	related to the Centre of	related to the
	Inertia.	Centre of Inertia.
	In this week I solve	Known about
	the various type of problem	the theorem how
	related to the method of	to separate the
	separation of a variable.	variable and solve
		them.
Date	Home task for the week	
	1. Prove that the set $N \times N$ is	enumerable.
	2. Let G be an abelian group of order 6	of order 6
	containing an element of order 3.	
	Prove that G is a Cyclic	group.
	3. Let G be an Infinite Cyclic group	
	generated by a . Prove that a and a^{-1} are	
	the only generators of the group.	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - II (Set theory)	Most of the student are hearing my speech very carefully but some of them are not carefully for their lesson.	
Sem - III (Group theory)	- All of them are very serious for their lesson and carefully hearing my speech.	 03/10/18
Year - III Rigid Dynamics	All are good but some of them are absent in their class.	
Sem - I (G.EI) (Differential Equation)	All of them are not good in their lesson.	 3.10.18 Principal Mugberla Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	* In my first class I ask all of them about their previous Examination of Semester-I and discuss their syllabus of Semester-II and tell about my topics which I teach them and give their basic idea of real Sequence, bounded Sequence, Supremum, infimum of a sequence, and solve the related problem.	Known about Sequence, Supremum, infimum of a sequence,
14.01.19 - 18.01.19	* In my first Class I ask all of them about their previous exam of Sem-II and discuss their syllabus of Sem-IV and tell about my topics which I teach them and give their basic idea of Rings and tell various kind of definition about Rings and also tell about various type of ring.	Known about def ⁿ of Ring and various types of Rings
	* In this week, I start the chapter motion about a fixed axis and solve the various problem of previous chapter and teach the Moment of effective force about the fixed axis.	Known about moment of effective force about fixed axis.
	* In my first class I ask the student to their previous exam and define their syllabus and state my topics.	Syllabus distribution
Date	Home task for the week	
	1. If $f(n) = (-1)^n \cdot n$, $n \in \mathbb{N}$, then show that the Sequence is unbounded above and bounded below and find Supremum and infimum.	
	2. Let S be the set of all real valued continuous function on the closed and bounded interval $[a, b]$. then show that S forms a Ring.	

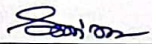
IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - I (Sequence)	All of the student are hearing my speech seriously and they are good in behaviour.	
Sem - IV (Rmgs)	All the student are present in their class and hearing my speech.	20/01/19
Year - III (Rigid Dynamics)	Most of them are not present in their class.	
Sem - I (BBI) (Relation)	Some of them are very poor.	20.01.2019 Principal Mugheria Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
21.01.19	* In this week I defined limit of sequence, convergence sequence and theorem of 5.3.1, 5.4.1 and solve the various mathematical problem about the above.	known about limit of sequence and convergence sequence.
25.01.19	* In this week, I defined about zero ring, trivial ring and state the theorem 3.1.2, 3.1.3 and define divisor of zero and solve the various example related to the above.	known about zero ring, trivial ring, divisor of zero.
	* In this week I defined the moment of momentum about the fixed axis, kinetic energy, Banation of motion about the axis of relation and solve various problem related this.	known about moment of momentum
	* In this week, I defined about relation, relation on set, Identity relation, reflexive relation, symmetric relation, transitive relation, equivalence relation and solve the various problem about reflexive relation.	known about relation, and Equivalence relation
Date	Home task for the week	
	1. Show that the sequence $\{\frac{n+1}{n}\}$ Converges to 1.	
	2. Show that $\{\frac{1}{n}\}$ Converges to 0.	
	3. Prove that $(-a) \cdot (-b) = ab$	
	4. Show that the ring of matrices $\begin{pmatrix} a & 0 \\ 0 & b \end{pmatrix}, a, b \in \mathbb{R}$ contains of divisor of zero and does not contains the unity.	

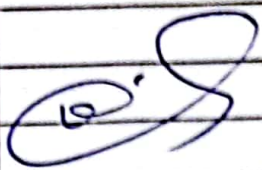
IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - II (Sequence)	They are very good and speech my topics seriously.	
Sem - IV (Ringo)	They are very serious for their class.	
Year - III (Rigid Dynamic)	Most of the student are intelligent but all of them are not present in their class.	
Sem - I (GBI) (Relation)	Some of them are very poor.	 25.01.2017 Principal Mugberia Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
	* In this week, I defined all of	
04.02.19	the student about the limit theorem	known about
8.02.19	such as 5.5.1, 5.5.2, 5.5.3 and 5.5.3	limit theorem
	and 5.5.4 and solve the various	
	type of Mathematical problem	
	related to these theorem.	
	* In this week, I defined	known about
	the theorem 3.1.4, 3.1.5 and	the theorem basis
	Solve the problem about the	on divisor of zero
	above theorem. I also defined	and units.
	about units and teach the	
	theorem 3.1.7, 3.1.8, 3.1.9. and	
	Solve worked example of Page	
	181, 182 of S.K. Mayra's book.	
	* In this week, I solved the	known about
	various problem of Motion about	motion about a
	fixed axis and start the	fixed axis.
	chapter Compound pendulum	Compound pendulum
	and theorem related to this,	Simple equivalent
	defined simple equivalent	Pendulum.
	Pendulum, Centre of Suspension,	
	Centre of oscillation and the	
	theorem related to this.	
Date	Home task for the week	
	1. If $\{u_n\}$ be a sequence and	$u_n \geq (-1)^n$ then
	the sequence $\{ u_n \}$ Converge to 1 but the	
	sequence $\{u_n\}$ is a divergent Sequence	
	2. In the ring $(\mathbb{Z}_n, +, \cdot)$ show that an element	
	$\bar{m}$ is a unit iff the $\gcd(m, n)$ is 1	
	3. Find the units in the ring of integral quaternions	
	4. $\left\{ \begin{pmatrix} a+ib & c+id \\ -c+id & a-ib \end{pmatrix} : a, b, c, d \in \mathbb{Z} \right\}$	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem - II Sequence	Most of the student are very good in their study.	
Sem - IV (Rings)	All of them are very sincere for their lesson.	 10/02/19
Year - III (Rings)	They are intelligent but most of them are not present in their class.	 10.02.2019 Principal Mr. Chandra Ganesha Mahalingam

IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week, I defined about	
11.02.19 -	Sandwich theorem and the	Known about
15.02.19	problem $\lim_{n \rightarrow \infty} (\frac{1}{\sqrt{n+1}} + \frac{1}{\sqrt{n+2}} + \dots + \frac{1}{\sqrt{n+n}}) > 1$	Sandwich theorem
	be solved. I also defined null sequence and related problem	
	divergent sequence and the	
	theorem 5.6.1 and 5.7.1 and	
	5.7.2 and solve various type	
	of mathematical problem related	
	to the above.	
	* In this week I defined	known about
	the theorem 3.1.10 and defined	Characteristic of
	the characteristic of a ring	a ring
	and teach 3.1.11 and solve	
	the various example of the	
	book S-K. Mapa's	
	* In this week, I defined the	Known about
	theorem the Centre of suspension and	Centre of Suspension
	Centre of oscillation are convertible	Centre of oscillation
	minimum time of oscillation of a given	
	Compound pendulum, and the various	
	mathematical problem related	
	solid homogeneous cone, bent lever,	
	and suspended sphere by fine wire	
Date	Home task for the week	
	1. A sequence $\{u_n\}$ is defined by $u = \sqrt{2}$ and	
	$u_{n+1} = \sqrt{2u_n}$ for $n \geq 1$, then prove that $\lim u_n = 2$	
	2. If $x_n = \{(a^n + b^n)^{1/n}\}$ $\forall n \in \mathbb{N}$ and $0 < a < b$	
	show that $\lim x_n = b$.	
	3. Prove that the characteristic of	
	a finite ring having no divisor of	
	zero is a prime number.	

IV. DIARY

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IV. DIARY

Date week ending	FORECAST	Amount Taught
	In this week I solve various worked example at the page of 144, 145, 146, 147 in the book of S. K. Mapa. I also solve the exercises 7 for various example solution of the S. K Mapa's book.	known about various properties about sequence
09.03.19 - 08.03.19	* In this week I defined about the theorem 3.3.1, 3.3.3, 3.3.4, 3.3.6 and also defined about Field. I also solve the various type of Mathematical problem about above.	known about the theorem on skew field and def ⁿ of Field.
	* In this week, I defined about the various problem related to composition of mapping and state the existence of inverse mapping and def ⁿ of inverse mapping and also solve the various problem about inverse mapping. and state about binary operation and composition table of binary operation.	known about composition of mapping, inverse mapping, binary operation.
Date	Home task for the week	
	1. Let $U_n = 1 + \frac{1}{2} + \dots + \frac{1}{n} - \log n$; $V_n = 1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{n} - \log n$	
	2. Show that $\{U_n\}$ is a monotonic decreasing sequence and $\{V_n\}$ is a M.D and they converge to the same limit.	
	2. Prove that the ring of matrices $\begin{pmatrix} a & b \\ -b & a \end{pmatrix}$, $a, b \in \mathbb{R}$ is a field.	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
Sem-II (Sequence)	All of the student are hearing my speech very seriously and very good in their lesson.	
Sem-IV (Rings)	All of them are very serious for their lesson.	
Sem-II (GBI) Mapping	Some of the student are very poor and some of them are not present in their class.	8.3.2019 Principal Mugberia Gangadhar Mahavidyalaya

B.Sc 3rd year
Real Analysis -

1. sequence of function:

definition, pointwise convergence,
uniform convergence, Cauchy criterion,
Dini theorem,

2. Series of function:

uniform convergence, Cauchy's principle
of convergence, Abel's and Dirichlet's
test, ~~def~~

3. Power series

definition of power series, radius of
convergence, Cauchy-Hadamard test,
Ratio test, Abel's theorem, uniqueness
theorem.

P.Gt - I Sem - classical Mechanics,

Generalized co-ordinates, Holonomic system
Lagrange's equation, Coriolis force, Hamilton's
Principle, Brachistochrone problem,
Poisson bracket, canonical transformations.
Liouville's theorem, special theory of
relativity in classical mechanics, Lorentz-
transformation.

PGT-III Sem - OR - Advanced optimization and operations
Research

Revised simplex method, modified dual
simplex, post optimal analysis,
Fibonacci and golden section method,
Goal programming problem,
modified simplex method of goal programming.

3. Detailed Syllabus (B) Second Term

From 01.01.2019 To 30.06.2019

B.S.C - II Semester - Differential Equation

Series solution:

convergence of a power series, Analytic function,
ordinary point, singularity at infinity.

Frobenius method, indicial eqn.

B.S.C - IV Semester :

1. Sequence of function:

Definition, pointwise convergence, uniform
convergence, Cauchy criterion, Dini theorem,

2. Series of function:

uniform convergence, Cauchy's Principle of
convergence Abel's and Dirichlet's test

3. Power series:

definition of power series, radius of convergence,
Cauchy-Hadamard test, Ratio test, Abel's
theorem, uniqueness theorem

M.S.C - II Semester: Topology.

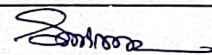
Connectedness, Compactness, Local-Compactness,
separation Axioms 1st and 2nd

Countable spaces, Hausdorff space

Regularity, Complete Regularity,

normality. Urysohn Lemma,

Tietz extension theorem (stated only).



Principal
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01.01.19

M.Sc - IV Sem;

1. Stochastic Process and Regression:

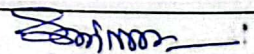
Stochastic Process, Markov chains with finite and countable state space. Classification of states
Gambler's ruin problem. Markov processes in continuous time. Multiple correlation.

2. Special Paper- OR - Nonlinear optimization:

the nature of optimization and scope of the theory. the optimality criterion of Linear programming, Slater's theorem of alternatives, Motzkin theorem of Alternatives optimality in the absence of differentiability and constraint qualification.

Geometric Programming Problem. Bimatrix Game Nash equilibrium.

P



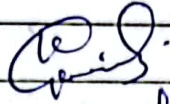
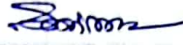
Principal
Mugberia Gangadhar Mahavidyalaya

01.07.19

IV. DIARY

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IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
PGI-I Sem of classical mechanics	I give some notes about	
	degree's of freedom and	
	constraints.	
B.SC-III Sem	I give some Notes about.	 28/07/18
	preliminary cocept of c-	
	language & Array, Pointer.	
		 28.07.2018 Principal Mugheria Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
20/08/18 - 25/08/18	Derive the Hamilton equations for conservative unconstrained holonomic system.	
		what is cyclic co-ordinate?
	Prove that $\frac{dH}{dt} = \frac{\partial H}{\partial t}$ where H is the Hamiltonian function.	
		S. Mishra say that
	what is post optimality analysis?	$L = L(q_1, q_2, \dots, q_n, \dot{q}_1, \dot{q}_2, \dots, \dot{q}_n)$
	discrete changes in the cost vector?	s.t. $\frac{\partial L}{\partial q_j} = 0$
	discrete change in the requirement vector?	
	what is Inheritance?	
	Real life example?	
	definition of derived class.	
	classification of inheritance?	
Date	Home task for the week	
27/08/18	the general form of defining a derived class.	

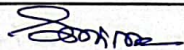
IV. DIARY

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IV. DIARY

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IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
M.Sc-I Sem Classical Mechanics	I give some Note about generalised co-ordinate	
M.Sc- IIT Sem OR	I give some Notes about unimodal function.	
B.Sc- IIT Sem C++	I give some Notes about that helps at the Application of OOP.	
		 8.09.2018 Principal Mugberia Gangadhar Mahavidyalaya

IV. DIARY

Date week ending	FORECAST	Amount Taught
19/11/18 - 01/12/18	Brachistochone problem. show that the path followed by particle in sliding from one point to another in the absence of friction in the shortest time is cycloid.	
		what is Golden Ratio?
	Fletcher-Reeves method?	many student say that Right answer
	what is flowchart of Fletcher-Reeves method?	
8/11/18		$\frac{a}{b} \approx 1.6$
	what is Newton method?	
	I got a surprise test this week for B.SC- III sem & I discussed some questions for final examination	
Date	Home task for the week	
03/12/18	using Fletcher and Reeves method	
	$\min f(x_1, x_2) = x_1 - x_2 + 2x_1^2 + 2x_1x_2 + x_2^2$	
	starting from the point $x_1 = \begin{bmatrix} 0 \\ 0 \end{bmatrix}$	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
M.Sc-Sem-I classical Mechanics.	I give some Note about Brachistochone problem.	
M.Sc-III sem OR	I give some notes and question & answer of Flecher and Reeves method.	
B.Sc-Ben-III c++	I give some Notes about question and answer type.	
		Principal Mugberia Gangadhar Mahavidyalaya

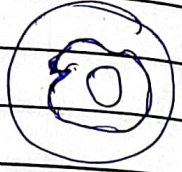
IV. DIARY

Date week ending	FORECAST	Amount Taught
19) 03/12/18 - 08/12/18	• state basic postulates of special theory of relativity. • Derive the Lorentz transformation equation for relativistic mechanics. • Prove that $x^2 + y^2 + z^2 - c^2 t^2$ is invariant under Lorentz transformation.	
	what is cutting plane method? Algorithm of cutting plane method: using cutting plane method	Find the conjugate direction for the matrix $\begin{bmatrix} 4 & 5 \\ 5 & 4 \end{bmatrix}$
	$f(x_1, x_2) = 7 - 2x_1 - 4x_2$ subject to $(x_1 - 4)^2 + 2(x_2 - 3)^2 \leq 12$ $x_1 + 2x_2 \leq 6$ $1 \leq x_1 \leq 6$ $1 \leq x_2 \leq 6.$	• many student solve this problem
Date	Home task for the week	last day of this week. I also discussed this problem.
20/12/18	using steepest descent method. minimize the function $f(x_1, x_2, x_3) = x_1^2 + x_2^2 + x_3^2 - 6x_1 - 4x_2 + 3x_3 + 9$ starting from the point $(1, 2, -3)$.	

IV. DIARY

Class and Subject	Notes and observation by the teacher	Remarks by Principal or HOD
M.Sc-I Sem classical mechanics.	I give some Notes about Special theory of relativity, $E=mc^2$, $m = m_0 \sqrt{1 - v^2/c^2}$ and $E^2 = m_0^2 c^4 + p^2 c^2$	
M.Sc-III sem		
O.R.	I give some notes about steepest descent method.	
		Principal Mugberia Gangadhar Mahavidyalaya 22.12.2018

IV. DIARY

Date week ending	FORECAST	Amount Taught
19/ 28/01/19 - 02/02/19	If A and B are connected sets which are not separated then $A \cup B$ is connected.	what is simply connected?
	Let X be a topological space show that the following conditions are equivalent	
	(i) X is disconnected.	
	(ii) There exists a non-empty proper subset of X which is both open and closed.	simply connected
		
	Let A be a connected subset of X and let $A \subset B \subset \bar{A}$. show that B is connected and hence particular A is connected.	not simply connected.
Date	Home task for the week	
04/02/19	Let $A = \{A_i\}$ be a class of connected subsets of X with a non-empty intersection. then $B = \bigcup_i A_i$ is connected.	

IV. DIARY

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