

**GOVERNMENT POLYTECHNIC JAJPUR**

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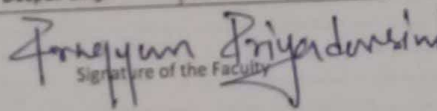
**LESSON PLAN**

**1ST SEMESTER, 1ST YEAR**

DISCIPLINE	SEMESTER	NAME OF THE TEACHING FACULTY: Smt. Pragyan Priyadarsini	
SUBJECT ENGG.M MATHEMATICS-III	NO.OF DAYS/WEEKS CLASS ALLOTTED	SEMESTER FROM DATE : 16/08/2024	TO DATE: 10/12/2024
		NO.OF WEEKS: 16	
WEEKS	CLASS DAY	TOPICS	
1st	1st	i) Concepts of angles, measurements of angles in degrees , grades and radians and their conversons.	
	2nd	ii) T-ratios of allied angles (without proof)	
	3rd	iii) Examples on allied angles	
	4th	iv) Sum formula and their applications.	
		v) Examples on sum formula of trigonometry values.	
		vi) Difference formula and their applications	
2nd	i) Examples on difference formula.		
	ii) Product formula (Transformation of product to sum and vice versa)		
	iii) Examples on product to sum formula.		
	iv) Product formula (Transformation of product to difference and vice versa)		
3rd	i) Examples on product to difference formula.		
	ii) T-ratios of multiple angles with examples .(2A,3A)		
	iii) Examples on multiple angles.		
	iv) T-ratios of sub-multiple angles(A/2,A/3).		
4th	i) Examples on sub-multiple angles.		
	ii) Examples on sub-multiple angles.		
	iii) Graphs of $\sin x$ , $\cos x$		
	iv) Graphs of $\tan x$ , $e^x$		
	v) Definitin of functions		
5th	i) Concept on limits.		
	ii) Four standard limits		
	<b>CLASS TEST-1</b>		
	iii) Examples on Four standard limits		
6th	i) Examples on Four standard limits		
	ii) Differentiations by definition of $\sin x$ , $x^n$ , $\cos x$		
	iii) Differentiations by definitions of $e^x$ , $\log_a x$ , $\tan x$		
	iv) Differentiations of sum and product of fuctions.		
	v) Differentiations of quotient of functions.		
7th	vi) Examples on quotients of function.		
	i) Differentiations of functions of a function.		
	ii) More examples on sum, difference and quotient of fuction.		
	iii) Differentiation of trigonometry functions.		
	iv) Differentiation of inverse trigonometry functions.		
	v) Differentiation of logarithmic function.		
8th	vi) Differentiation of exponential function.		
	i) Discuss objective type Questions and answer.		
	ii) Definition of Complex numbers.		
	iii) Real and imaginary parts of complex number.		
	iv) Polar and cartesian representations of complex number.		
9th	v) Conversion from one form to another form.		
	i) Conjugate of complex number.		
	ii) Modulus of complex number.		
	iii) Amplitude of complex number.		
	iv) Examples on conjugater , amplitude and modulus of complex number.		
10th	v) Addition and substractions of complex number.some examples on addition and subtraction .		
	vi) Multiplication and division of complex number.		
	i) Some examples on multiplications and division of complex number.		
	ii) De-movier's theorem.		
	iii) Applications of de-movier's theorem.		
11th	iv) Discuss objective type question with answer .		
	i) Definition of polynomial fraction.		
	ii) Definition of proper and improper fractions.		
	iii) Definition of partial fractions.		
11th	i) Solve proper fraction into partial fraction with denominator containing non-repeated linear factor.		
	ii) Solve proper fraction into partial fraction with denominator containing repeated linear factor.		

	3rd	iii) some examples on non-repeated linear factor.
	4th	iv) More examples on repeated linear factor.
12th	1st	i) Solve proper fraction into partial fraction with irreducible non-repeated quadratic factor.
	2nd	ii) Discuss examples on non-repeated quadratic factors.
	3rd	iii) Discuss examples on non-repeated quadratic factors.
	4th	iv) <b>CLASS TEST -2</b>
13th	1st	i) Discuss about improper fraction with an example.
		ii) Solve improper fraction into partial fraction.
		iii) Discuss questions on improper fractions to partial fraction.
	2nd	iv) Discuss objective type question with answer.
14th	3rd	v) Definition of permutations and combinations.
	4th	vi) Value of $p(n,r)$
	1st	i) Value of $C(n,r)$
	2nd	ii) Binomial theorem (without proof).
15th		iii) Binomial theorem for positive integral index.
	3rd	iv) Binomial theorem for any index (Expansion without proof).
	4th	v) First binomial approximations.
	1st	i) Second binomial approximations.
16th		ii) Examples of first and second binomial approximations.
	2nd	iii) First and second binomial approximations with applications to engineering problems.
	3rd	iv) Discuss exercise of binomial approximations.
	4th	v) Discuss objective type question with answer.
17th	1st	i) Discuss previous year questions with answer.
	2nd	ii) Discuss previous year questions with answer.
	3rd	iii) Discuss previous year questions with answer.
	4th	iv) Discuss previous year questions with answer.

Learning Resources:			
Sl. No.	Title of the Book	Name of Authors	Name of Publisher
1.	Higher engineering Mathematics	Dr B S. Grewal	Khanna publishers
2.	Elements of Mathematics Vol-I	Odisha State Bureau of text book preparation and production	
3.	Text Book of Engineering Mathematics-I	CR Mallick	Kalayani publication
4.	Mathematics-I	Dr. Deepak Singh	Khanna publication

  
 Signature of the Faculty / 16/08/2024