

Discipline: COMMON	Semester: SECOND SEMESTER	Name of the Teaching Faculty: ASISH SHARMA LECTURER IN MATHEMATICS
Subject: ENGG. MATH-II	No. of Days/per week class allotted:(L+T) (05+01) DAYS=06 DAYS	Semester From Date: No. of Weeks: 15 WEEKS To Date:
<b>Week</b>	<b>Class Day</b>	<b>Theory Topics To Be Covered</b>
<b>FIRST</b>	01	<b>UNIT-1:-</b> Introduction to vectors, Types of vectors (null vector, parallel vector, collinear vectors)
	02	component form of vectors
	03	Representation of vector
	04	Magnitude and direction of vectors
	05	Addition and subtraction of vectors
	06	<b>TUTORIAL CLASS</b>
<b>SECOND</b>	07	Position vectors
	08	Scalar product of two vectors
	09	Geometrical meaning of dot product
	10	Angle between two vectors
	11	Vector product and its geometrical meaning
	12	<b>TUTORIAL CLASS</b>
<b>THIRD</b>	13	Scalar and vector projection of two vectors
	14	<b>Class Test covering the topics of Vector.</b>
	15	<b>UNIT-2:-</b> Definition of function, based on set theory
	16	Types of functions (Constant function, Identity function, Absolute value function, Greatest integer function)
	17	Types of functions (Trigonometric function, Exponential function, Logarithmic function)
	18	<b>TUTORIAL CLASS</b>
<b>FOUR</b>	19	Introduction of limit of a function,
	20	Existence of limit of a function,
	21	Methods of evaluation of limit of various standard function $\lim_{x \rightarrow 0} \frac{a^x - 1}{x} = \log_e a, \lim_{x \rightarrow 0} \frac{x^n - a^n}{x - a} = na^{n-1}$
	22	Methods of evaluation of limit of various standard function $\lim_{x \rightarrow 0} \frac{e^x - 1}{x} = 1, \lim_{n \rightarrow \infty} (1 + \frac{1}{n})^n = e, \lim_{n \rightarrow \infty} (1 + \frac{1}{n})^k = e^k$
	23	Methods of evaluation of limit of various standard function $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1, \lim_{x \rightarrow 0} \frac{\tan x}{x} = 1, \lim_{x \rightarrow 0} \log \frac{(1+x)^k}{x} = 1$
	24	<b>TUTORIAL CLASS</b>
<b>FIFTH</b>	25	Definition of continuity of a function at a point.
	26	Discussion about continuity of various functions at a given point.
	27	Solving problems related to continuity



	28	<b>Class Test covering topics of Limit &amp; Continuity.</b>
	29	<b>UNIT-3:-</b> Derivative of a function at a point.
	30	<b>TUTORIAL CLASS</b>
<b>SIXTH</b>	31	Finding Derivative of standard functions using fundamental methods (Polynomial of degree n, exponential, constant function)
	32	Finding Derivative of standard functions using fundamental methods (trigonometric functions, Inverse trigonometric functions)
	33	Derivative of composite function (Chain Rule)
	34	Derivative of composite function (Chain Rule)
	35	Methods of differentiation of Parametric function
	36	<b>TUTORIAL CLASS</b>
<b>SEVEN</b>	37	Methods of differentiation of Implicit function
	38	Methods of differentiation of Logarithmic function
	39	Methods of differentiation of a function with respect to another function
	40	<b>Quiz Test</b>
	41	<b>Class Test covering topics related to differentiation</b>
	42	<b>TUTORIAL CLASS</b>
<b>EIGHT</b>	43	Successive Differentiation (up to second order)
	44	Successive Differentiation (up to second order)
	45	Problems related to Successive differentiation.
	46	Problems related to Successive differentiation.
	47	Introduction to Partial Differentiation
	48	<b>TUTORIAL CLASS</b>
<b>NINE</b>	49	Finding partial differentiation of various function
	50	Finding partial differentiation of various function
	51	Euler's theorem & problems based upon it
	52	<b>Class Test covering topics related to Partial differentiation</b>
	53	<b>UNIT-4:-</b> Definition of integration as inverse of differentiation
	54	<b>TUTORIAL CLASS</b>
<b>TENTH</b>	55	Finding Integrals of standard functions
	56	Finding Integrals of standard functions
	57	Methods of integration by substitution
	58	Methods of Integration by parts
	59	Methods of Integration by parts
	60	<b>TUTORIAL CLASS</b>
<b>ELEVENTH</b>	61	Partial Fraction method
	62	Partial Fraction method
	63	Integration of the following forms
	64	Integration of the following forms
	65	Integration of the following forms
	66	<b>TUTORIAL CLASS</b>
<b>TWELVE</b>	67	Integration of the following forms
	68	Integration of the following forms



	69	Class Test Covering Indefinite Integrals
	70	Definite integral, properties of definite integrals
	71	Definite integral, properties of definite integrals
	72	<b>TUTORIAL CLASS</b>
<b>THIRTEEN</b>	73	Finding the area enclosed by a curve and X - axis using definite integrals.
	74	Finding the area of a circle with centre at origin using definite integrals.
	75	Class Test Covering Definite Integrals.
	76	<b>UNIT-5:-</b> Introduction to Ordinary differential equations
	77	Finding Order and degree of a differential equation
	78	<b>TUTORIAL CLASS</b>
<b>FOURTEEN</b>	79	Finding Order and degree of a differential equation with various examples.
	80	Quiz Test covering finding Order and degree of a differential equation
	81	Solution of differential equation of 1st order and 1st degree equation by the method of separation of variables
	82	Solution of differential equation of 1st order and 1st degree equation by the method of separation of variables
	83	Solution of a Ordinary Linear differential equation.
	84	<b>TUTORIAL CLASS</b>
<b>FIFTEEN</b>	85	Solution of a Ordinary Linear differential equation.
	86	Class Test covering topics of Unit-5.
	87	<b>Mock Semester Exam</b>
	88	<b>Mock Semester Exam</b>
	89	<b>Mock Semester Exam</b>
	90	<b>Mock Semester Exam</b>

—*Asish*  
20/03/2022.  
(ASISH SHARMA)  
LECT. IN MATH