Sec - E1 (math)

BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

SIVARAM VIHAR, GHATAKESWAR HILLS
MOHADA, BERHAMPUR (GM.)

STUDENT'S ATTENDANCE REGISTER

Time / Day	9.05 - 9.55	9.55 - 10.45	10.45 - 11.35	11.35 - 12.25	1.05 - 1.55
MON				Engg. math-2	
TUE	Engg. math-2				
FRI		Engg. math-2	Engg. math-2		
SAT		Engg. math-2			Engg. math-2

Year/ Session	20.3.23 to 26.6.23
Semester & Branch	2nd Semester Electrical Branch (Sec-D)
Subject with Code	Engg. mathematics - 2
Name of the Faculty Member	Sibaj Tarai

B.I.E.T., COURSE PLAN

nth	Week	Class Day	Theory/Practical Topic
MARCH → April	1st → 4th		(1) vector algebra
		20/03/23	(a) Introduction
		21/03/23	
		24/03/23	(b) Type of vectors (null, vector, parallel vector, collinear vector) (in component form)
		24/03/23	(c) Representation of vector.
		25/03/23	(d) magnitued and direction of vectors.
		25/03/23	
	5th → 2nd	27/03/23	(e) Addition and substraction of a vectors.
		28/3/23	(f) position vector.
		31/3/23	(g) Scalar product of two vectors.
		31/3/23	(h) Geometrical mening of dot product
		3/04/23	(i) Angle between two vector
		4/04/23	
		8/04/23	(j) Scalar and vector projection of two vectors.

Sign 17/03/23

B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
APRIL	2nd	08/04/23	(1) vector product and geometric meaning (Area of triangle and parallelog
		10/04/23	
	3rd	11/04/23	(2) Limits and continuity (a) Defination of function, based on set theory.
		15/04/23	(b) Type of functions.
		15/04/23	(i) Constant function.
	4th	17/04/23	(ii) Identity function.
		18/04/23	(iii) Absolute value function. (iv) The greatest integer functio
			(v) Trigonometry function.
			(vi) Exponential function.
			(vii) Logarithmic function.

8) 17/08/23

B.I.E.T., COURSE PLAN

onth	Week	Class Day	Theory/Practical Topic
APRIL	4th	21/04/23	(c) Introduction of limit
		21/04/23	(d) Existance of limit
		22/04/23	(e) methods of evaluation of limit.
		22/04/23	(i) $\lim_{x \to 0} \frac{x^n - a^n}{x - a} = n a^{n-1}$
	5th	24/04/23	(ii) $\lim_{x \to 0} \frac{a^x - 1}{x} = \log_e a$
			(iii) $\lim_{x \to 0} \frac{e^x - 1}{x} = 1$
		25/04/23	(iv) $\lim_{x \to 0} (1+x)^{1/x} = e$
			(v) $\lim_{x \to \infty} (1 + 1/x)^x = e$
			(vi) $\lim_{x \to 0} \frac{\log(1+x)}{x} = 1$
			(vii) $\lim_{x \to 0} \frac{\sin x}{x} = 1$
			(viii) $\lim_{x \to 0} \frac{\tan x}{x} = 1$

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
APRIL	5th	28/04/23	(e) Defination of continuity of a function at a point and problems based on it.
			(3) Derivatives
		28/04/23	(a) Derivative of a function at a point.
		29/04/23	(b) Algebra of derivative.
		29/04/23	(c) Derivative of a standard function.
MAY	1st	1/5/23	x^n, a^x, $\log_a x$, e^x, $\sin x$, $\cos x$,
		2/05/23	$\tan x$, $\cot x$, $\operatorname{cosec} x$, $\sec x$,
		6/05/23	$\sin^{-1} x$, $\cos^{-1} x$, $\tan^{-1} x$, $\cot^{-1} x$,
	2nd	6/05/23	$\operatorname{cosec}^{-1} x$, $\sec^{-1} x$.
		8/05/23	
		9/05/23	

9/05/23
17/03/23

B.I.E.T., COURSE PLAN

onth	Week	Class Day	Theory/Practical Topic
MAY	2nd	12/05/23	(d) Derivative of composite function. (chain Rule)
		12/05/23	
		13/05/23	(e) method of differentiation of
		13/05/23	(i) parametric function
	3rd	15/05/23	(ii) Implicity function.
		16/05/23	(iii) logarithmic function.
		20/05/23	(iv) A function with respect to another function.
		20/05/23	
	4th	22/05/23	(f) Application of Derivatives.
		23/05/23	(i) Successive Differentiation (up to 2nd order)
		26/05/23	(ii) partial differentiation. (function of 2nd variable up to 2nd order)
		26/05/23	(g) problems based on above.

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
MAY	4th		(4) Integration :-
		27/05/23	(a) Defination of integration as invers of differentiation.
		27/05/23	(b) Integral of standard function
	5th	29/05/23	(c) method of integration
		30/05/23	(i) Integration by substitution
		2/06/23	(ii) Integration by parts.
JUNE	1st	2/06/23	(d) Integration of the following forms.
		3/06/23	(i) $\int \frac{dx}{x^2+a^2}$ (ii) $\int \frac{dx}{x^2-a^2}$
		3/06/23	(iii) $\int \frac{dx}{a^2-x^2}$ (iv) $\int \frac{dx}{\sqrt{x^2+a^2}}$

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B.I.E.T.,COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
JUNE	2nd	5/06/23	(v) $\int \frac{dx}{\sqrt{x^2-a^2}}$ (vi) $\int \frac{dx}{\sqrt{a^2-x^2}}$
		06/06/23	(vii) $\int \frac{dx}{x\sqrt{x^2-a^2}}$ (viii) $\int \sqrt{a^2-x^2}\,dx$
		9/06/23	(ix) $\int \sqrt{a^2+x^2}\,dx$, (x) $\int \sqrt{x^2-a^2}\,dx$
		9/06/23	(e) Definite integral property of definite integrals.
		10/06/23	(i) $\int_0^a f(x)\,dx = \int_0^a f(a-x)\,dx$
			(ii) $\int_a^b f(x)\,dx = -\int_b^a f(x)\,dx$
			(iii) $\int_a^c f(x)\,dx = \int_a^b f(x) + \int_b^c f(x)\,dx$, $a<b<c$
			(iv) $\int_{-a}^{a} f(x)\,dx = 0$ if $f(x)=$ odd; $= 2\int_0^a f(x)\,dx$ if $f(x)=$ even

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B.I.E.T., COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
JUNE	2nd	10/06/23	(4) Application of integration
	3rd	12/06/23	(i) Area enclosed by curve and x-axis.
			(ii) Area of a circle with center at origin.
			(5) Differential Equation
		13/06/23	(a) order and degree of a differential equation.
		16/06/23	
		16/06/23	(b) solution of differential equation
		17/06/23	(i) 1st order and 1st degree equation by the method of separation of variables.
		17/06/23	
		19/06/23	
	4th	23/06/23	
		23/06/23	

17/03/23

B.I.E.T.,COURSE PLAN

Month	Week	Class Day	Theory/Practical Topic
JUNE	4th	24/06/23	(ii) Linear equation.
		24/06/23	$\frac{dy}{dx} + Py = Q$
	5th	26/06/23	where, P, Q are function of x.

17.3.23

17/03/23