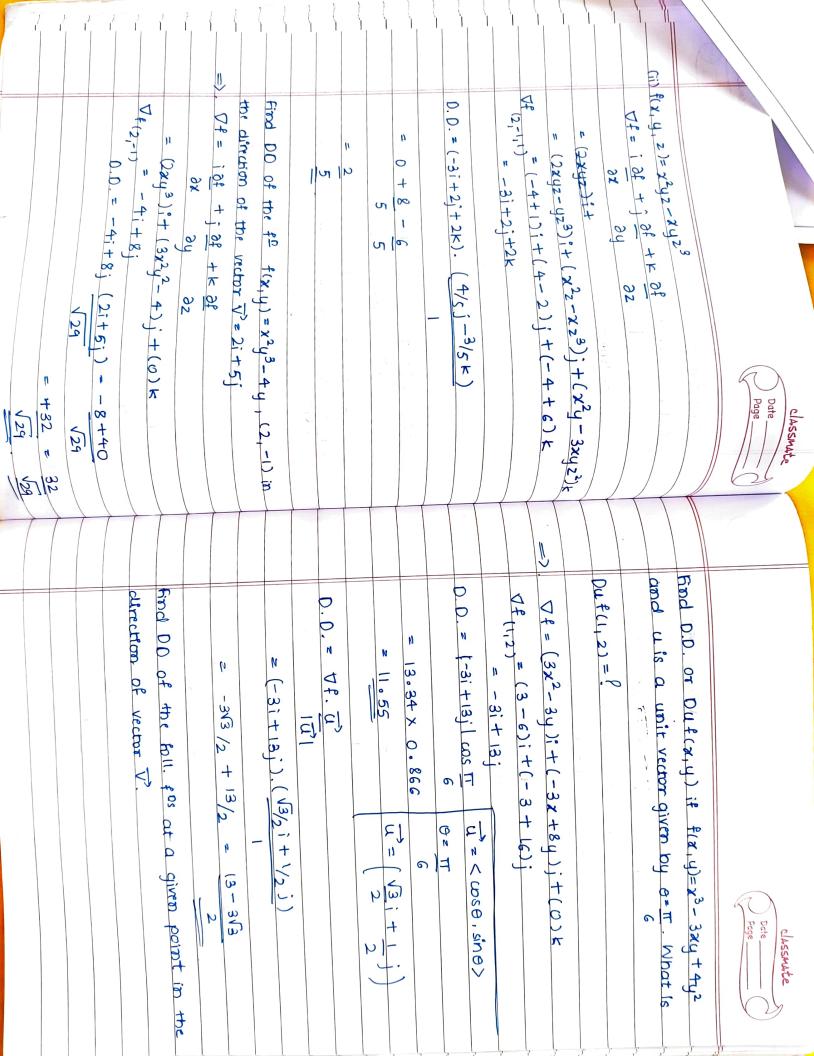
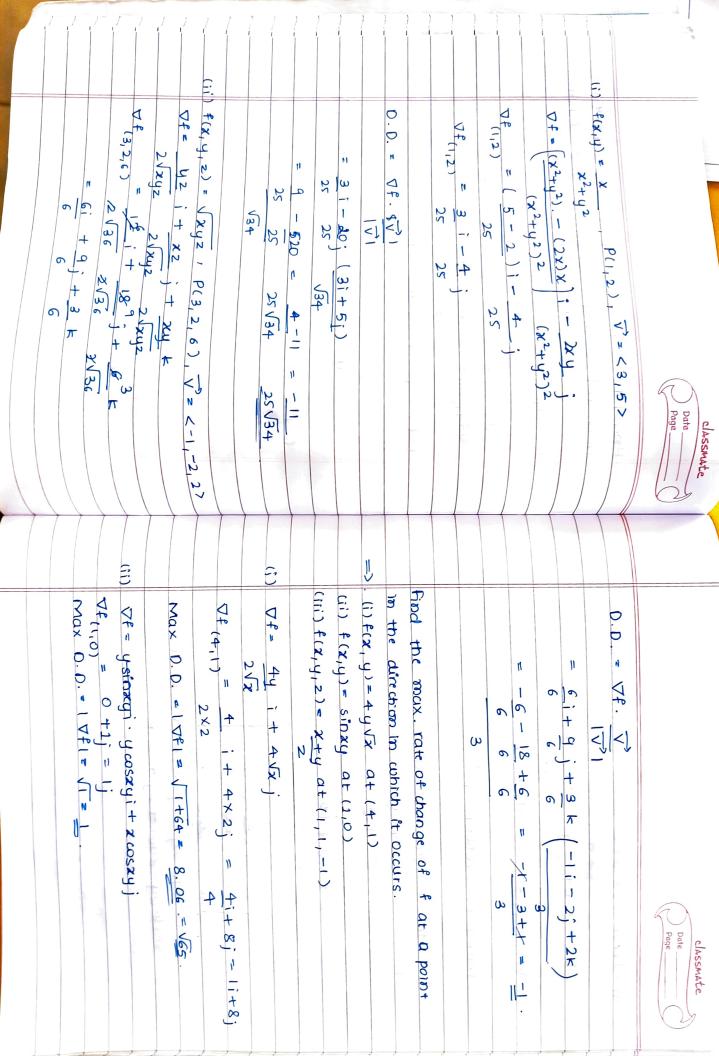
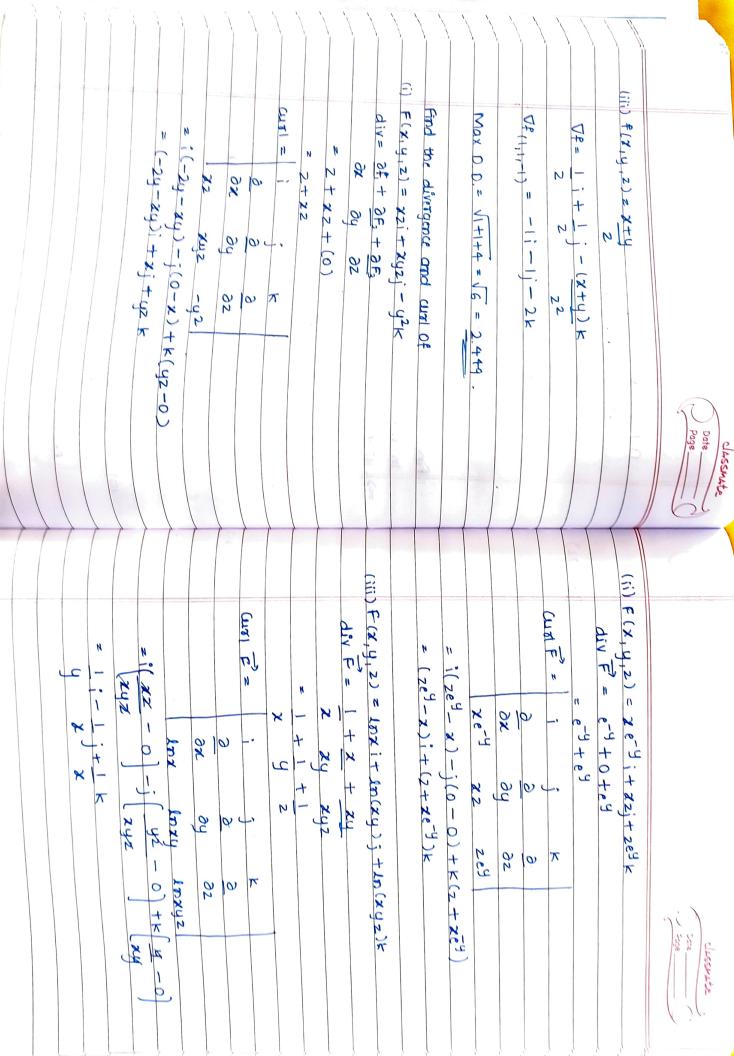
113	$(t_1, 3, 0) = 0 + 0 + 3k$	7. = 1 sinyz + 22 wsyz + 2 wsyz = 1	Of - + Start +	7	= sinyz 1 + xsinyz + xxxxx + kxxxx x x x x x x x x x x x x	2	tjæf + kæf		0	$0) + (x, y, z) = x^2yz - xyz^3$, $P(2, -1, 1)$, $Q = (0, \frac{4}{7}, -\frac{3}{7})$		2)(i)	direction of vector u.	(iii) find the rate of change of f at P. in the	(ii) Evaluate the grad at point P.	(i) And grad of f	2) For the foll fas		e) V= i+2j-k	b) find D. D. of f at (1, 3, 0) in the direction of		2	Fage
			2 2 2	0. 0. = \(\bar{3} \) = \(\bar{3} -	1 .	(2 2)	D.D. = 21+3; (\3) - \{1;} = \3 b + 3;	Ŋ	$\nabla f_{-} = 2\cos(-12+12) + + 3\cos(-12+12)$	$= 2 \cos(2x + 3y) + 3 \cos(2x + 3y) + 0$	ex ey ez	Of = i of + j of + k of		V6 12 X3×V2 V2	$= -3 = -\sqrt{3} \times \sqrt{3} = -\sqrt{3}$	15 J	3K. (i+2;-k)	(113,0) (2	$= (sinyz)i + (xz\omega suz) + (xy\omega suz) \cdot (i+2i-k)$	امًا	0. 0. = Vf. a	Of = (sinyz);+(xzcosyz);+(xycosyz) >	Date Page

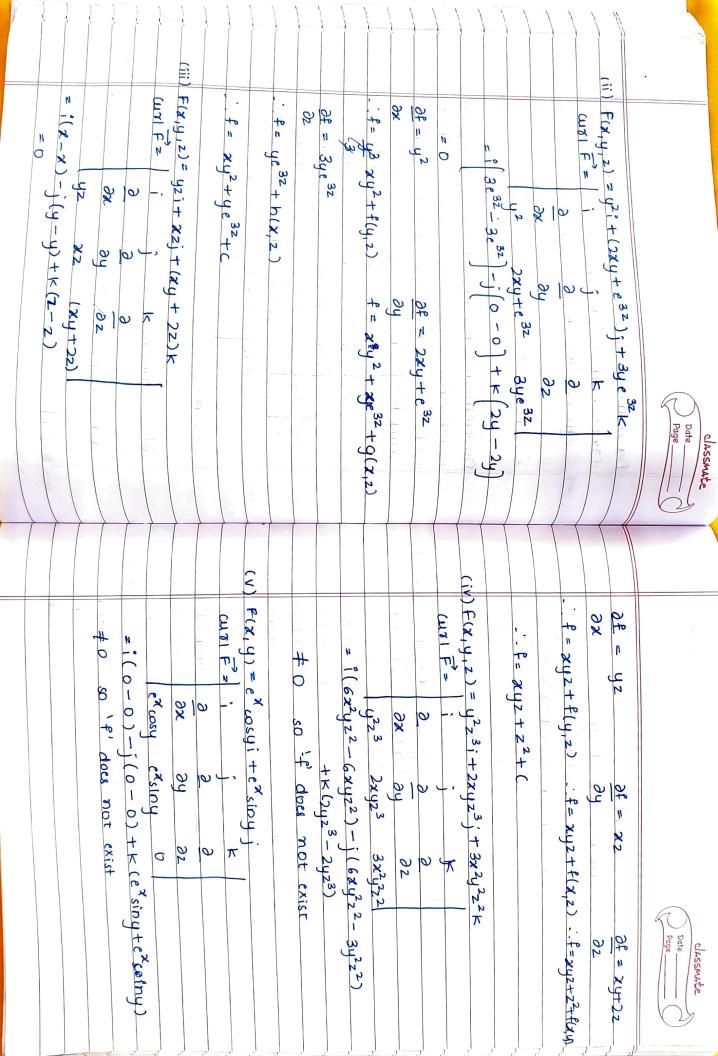
Date Page

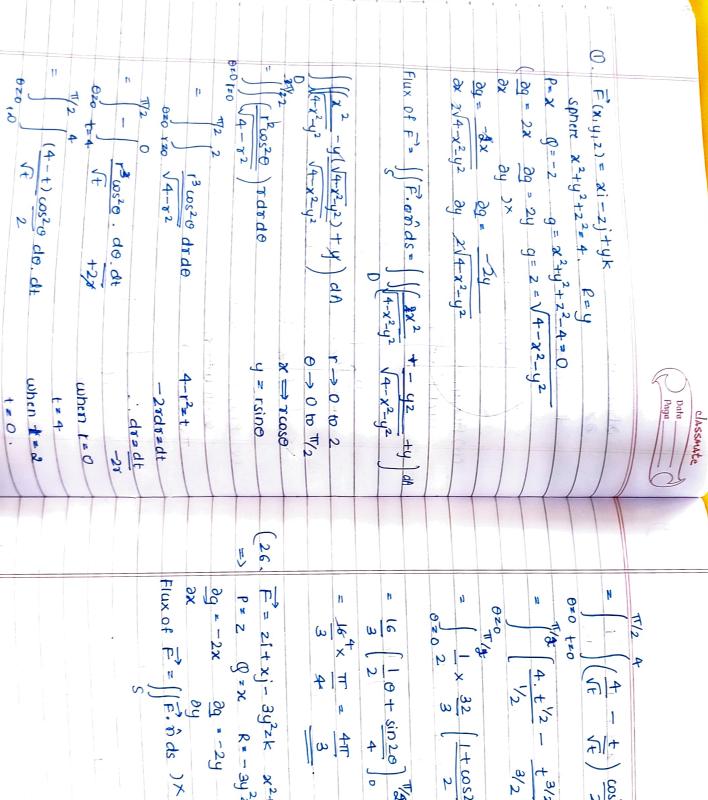






			$(u_{1} F) = 0$		y2+22) (x2+y2+22)2 (x2+y2+22		2+22 22	x 4 2	25 dy 32		Curl F =	$x^2+y^2+z^2$	div F= 1	$(x^2+y^2+z^2)^2$	$= x^2 + y^2 + z^2$	$(x^2+y^2+z^2)^2$	$= 3(x^2+y^2+z^2)-2x^2-2y^2-2z^2$	(x2+y2+22)2	div F = (x2+12+22) - x (2x)+xx+y+2+2-)-y(2y)-x(2x)	x2+y2+z2 x+y+z- x+y+z-	(ii) $F(x,y,z) = x + y + z + x$	Date Page
-, f= x lny+x2y3+C	$f = \chi \ln y + \chi^2 y^3 + f(y)$ $f = y^3 \chi^2 + \chi \ln y + f(\chi)$	Francisco Company	うち 1mm+2xm3 0f=3y2x2+x	110	9	+ K (64x+1-(1+6x42)	4)	= 0 (0 - (64×2-×)) - (0 - (1 + 6×42))	Plx+x/H	be he xe	9 9	Curi F = 1	(1) $F(x, y, z) = (\ln y + 2xy^3) + (3y^2x^2 + x/y)$	vector field if it is fixed for such that F= \f	Determine whether or not f is a conservative		v is solenoidal	О	$div \vec{\nabla} = -2x + 4 + 2x - 4$	(1x2-4z)k is solenoidal or not.	Determine whether $\vec{V} = (-x^2 + yz)^2 + (4y - 2^2x)^2 +$	Date Page





 $F^2 = 2(+x) - 3y^2zk$ $x^2+y^2=16$ b/w z=0 4 z=5 P = z g = x $R = -3y^2z$ $g = 16-x^2-y^2$ in the g = -2x g = -2x g = -2y first order g = -2x g = -2y $\frac{1}{620} \times \frac{32}{3} \left(\frac{1 + \omega s^{20}}{2} \right) d\theta$ 10 x T = 4T $\left(\frac{1}{2}\theta + \sin 2\theta\right)^{\text{T/A}}$ $\frac{4 \cdot t^{1/2} - t^{3/2}}{\frac{1}{2}} = \frac{4 \cdot t^{3/2}}{\frac{3}{2}} = \frac{4 \cdot$ $\left(\frac{4}{\sqrt{t}} - \frac{t}{\sqrt{t}}\right) \frac{\cos^2 \theta}{2} dt d\theta$ first octant

