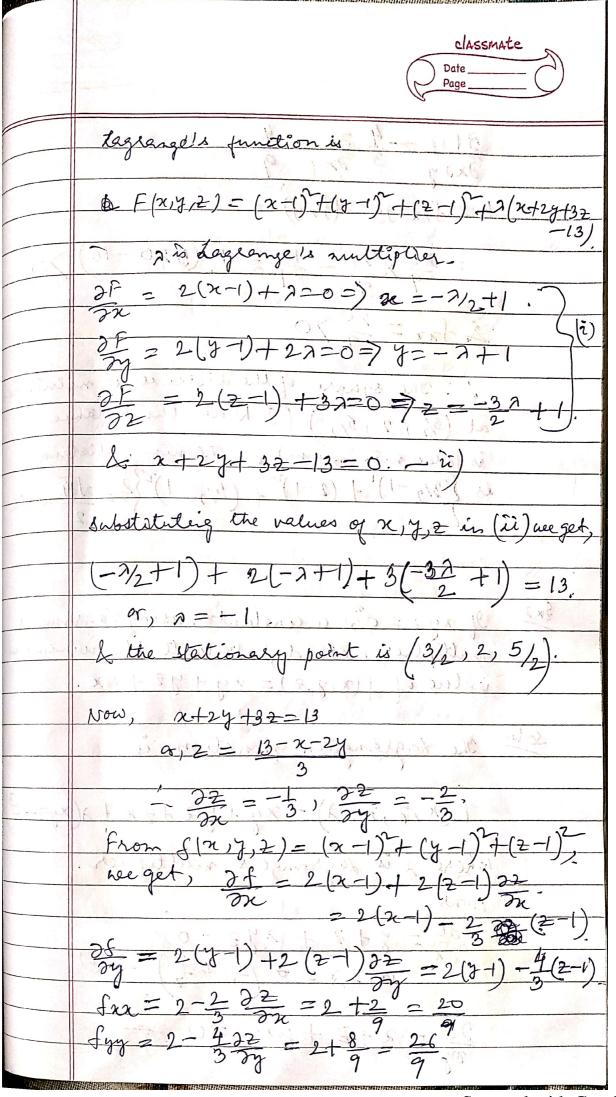
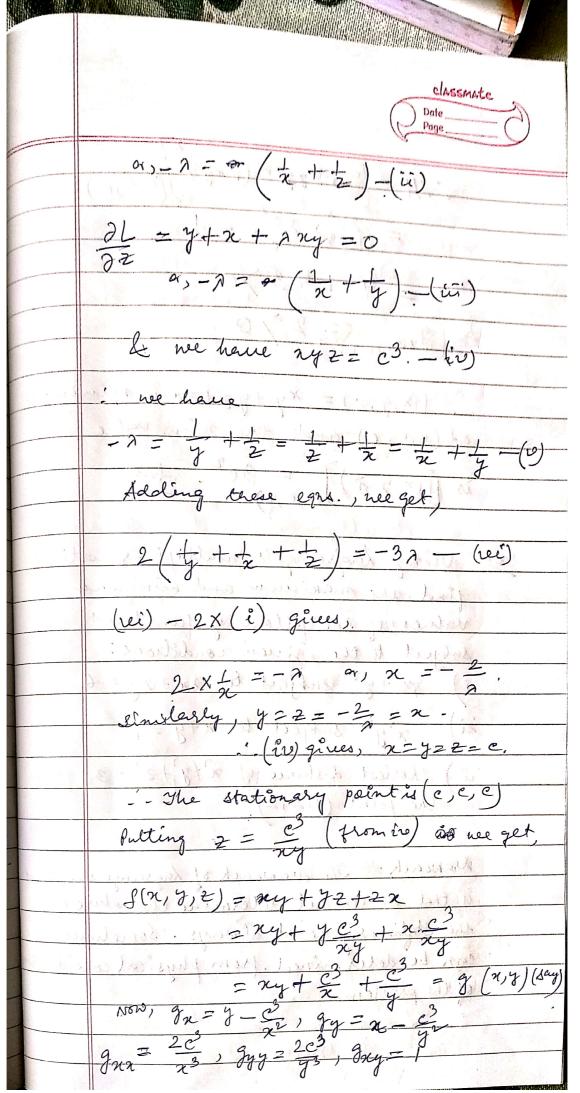
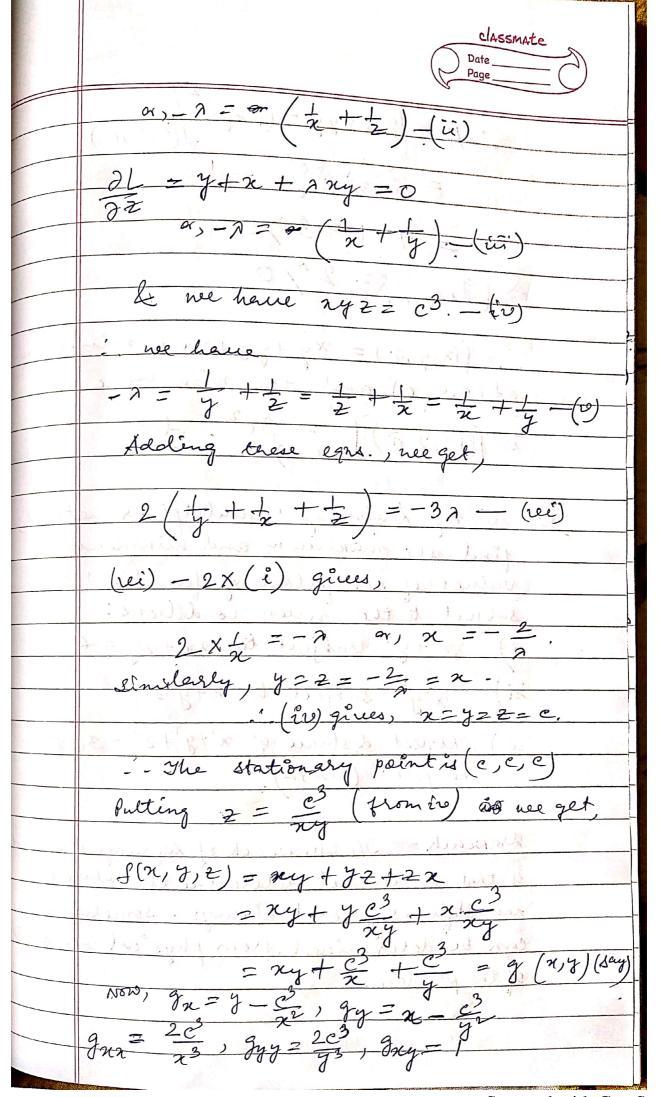
	classmate
	Date Page
	wiltiplier.
	Method of Lagrange's multiplier.
7.A	1 Paris Maria Mari
7	Let u=f(x,y)z) be a function of 3
	Let $u = f(x, y, z)$ be a function of 3 variables which are connected by the
(X. 6 P)	relation $\varphi(x,y,z) = 0$ .
	working Rule.
: S.E	
	1. construct F(x,y, =) = f(x,y, 2)+29(x,y,2)
	alla the quations of 20 df 20 df
	2. Obtain the equations of 20 of 20 of
1 P w 1	a (3) equations along
(R (16) +	3. Some the above (3) equations along with the equation $q(x, y, Z) = 0$
( a list	with the equation of (h)
	The values of x, y, z so obtained will give the stationary values of f(x, y, z)
-0X	give the stationary values of + (3, 4, 7)
3.	the trans of forte of the will and the
200	I Find a point in the plane
13	x+2y+32 = 13 nearest to the point (11/1)
MA	raking the method of lagrange's multipliers.
Am.	Let P(21, y, 7) be any point on 20+20j+37=13.
	All 1015 (1010) CC 2000 pace 1010 1010 1010 1010 1010 1010 1010 10
	The distance 6/w P(x,y,2) & (1,1,1) is
	V(x-1)2+(2-1)2-
116	her take the square of the distance as
	f(x,y,2).
	· (Px 14 12) - (2x -1) 2+(2x -1) 2+(2x -1)
	: f(x,y,z) = (x-1) + (y-1) + (z-1) subject to the constraint
	x. +2h, +27.=12
	2+24+3=13
- The second sec	to a translation desired to the plantacion of the contract of



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1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	L'auge
<u> </u>	of -4 22 = 4
	Dray 3 Dr 9
( ) (	H = fxxfyy - (fxy)
-	20 20 16 - 1 (520 - 16)
-	= 20 x 26 - 81 = 81
	0.0
1	2 daz = = = >0
]	0 H. 12 Fo. 10 13
i R	. The square of the distance is minimum
17/2	at (3/2) 2, 5/2) (& hence the distance
	is also menimum) & the nin, dietance
	is S(3/2-1)2+(2-1)2+(5/2-1)2/2= VI
20(1)	Land Company of the particular 2
4	
122	If my 2 = c3, a constant, using Lagrange,
	If my z = c3, a constant, using Lagrange, multiplier method evaluate the minimum
27	multiplier method, evaluate the minimum value of $f(x,y,z) = xy + yz + zx$ .
	EL CAMPICIA
soln	The Lagrangian function is
	one region for the
	16x 4 2 1 - x , L 4 2 1 2 x 1 2/247-6
- 1	(x,y,z,2)=xy+y2+2x+2(xy)-
	where a is Lagrange's multiplier
- 555	wow,
5)	2 = y+z+ 2 = 20
17.	$\frac{\partial^2 x}{\partial x} = \frac{\partial^2 x}{\partial y} = \frac{\partial^2 x}{\partial y$
2	( g + 2)
	21 - 2+2+22=0
	26 = 2+2+2 =0 -0
	О



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	27
	2-H = [gazgyy - (gaz)](e,c,e)
	J(e,e,e)
	$=\frac{2c^3}{c^3}\times\frac{2c^3}{3}-1$
	3.
	= 4-1=3>0
	2 (gaz) (c,c,c) = 270.
	(c,c,c)
	2 0 0
	- f(x,y, 2) = ky + y 2 + 2 2 15 minimum
The line	at (c, c) and the nin. value
	is f(x,y, =) (c,c,c)
	(c,c,c)
2213	Using Lageorige's multiplier method find the maximum and minimum
	tood the maximum and numinum
	fina me
	redues of the following functions
	subject to the given conditions: i) x + y > subject to 3x + 2y = 6
(4	i) x ty subject to 3x +24 = 6
- 11	No. of the second secon
- la	i) ry subject to noy = 1
ii	in) shortest distance of n'ty'+2'=36 from the point (1,2,2).
( )	the point (1,2,2)
t vec	The Control of the Co
	The State of the S
	Frankack - The drawback of lagrangers method
is .	that we cannot determine the nature of
	10 chti
	he Stationary point always. Sometimes, it
Ca	in be determined from physical consideral
	the problem.
1	Experience of the second secon
4.8	
	10 10 10 10 10 10 10 10 10 10 10 10 10 1
	Part of the second seco



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	$H = \left[3nx3yy - \left(3ny\right)\right](e, e, e)$
	J(e,c,e)
	$=\frac{2c^3}{c^3}\times\frac{2c^3}{3}-1$
	= 4-1=3>0
	$2\left(9u\right)_{(c,c,c)}=270.$
	(c,c,c)
	$f(x,y,\pm) = xy + y + 2 + 2 x is mining$
	$f(x,y,\pm) = xy + y + 2 + 2 x is minimum at (c,c,c) and the nin. value$
	is f(x,y, z) (c,c,c)
-	
223	Using Lagrange /s multiplier method find the maximum and minimum
	find the maximum and niminum
	values of the following functions
	subject to the given conditions:
	subject to the given conditions:  i) x7y subject to 3x+2y=6
	ii) xy subject to x+y=1
1757 (and)	
. L	in) Shortest distance of n'ty'72 = 36 from the point (1,2,2)
1.0	The point (1)2,2).
	discupach — M
	Granback - The drawback of lagrangers method
High and the second of the sec	anno determine the nature of
C	the stationary point always. Sometimes, it
	on be determined from physical consideration of the problem.
	The state of the s