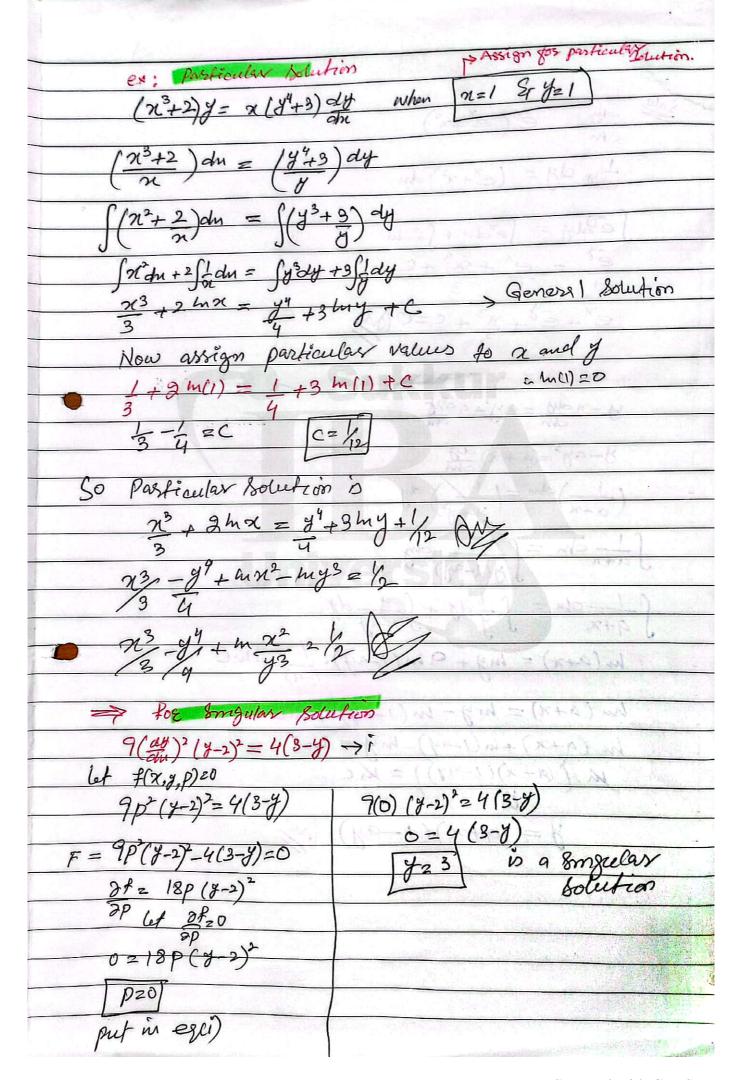
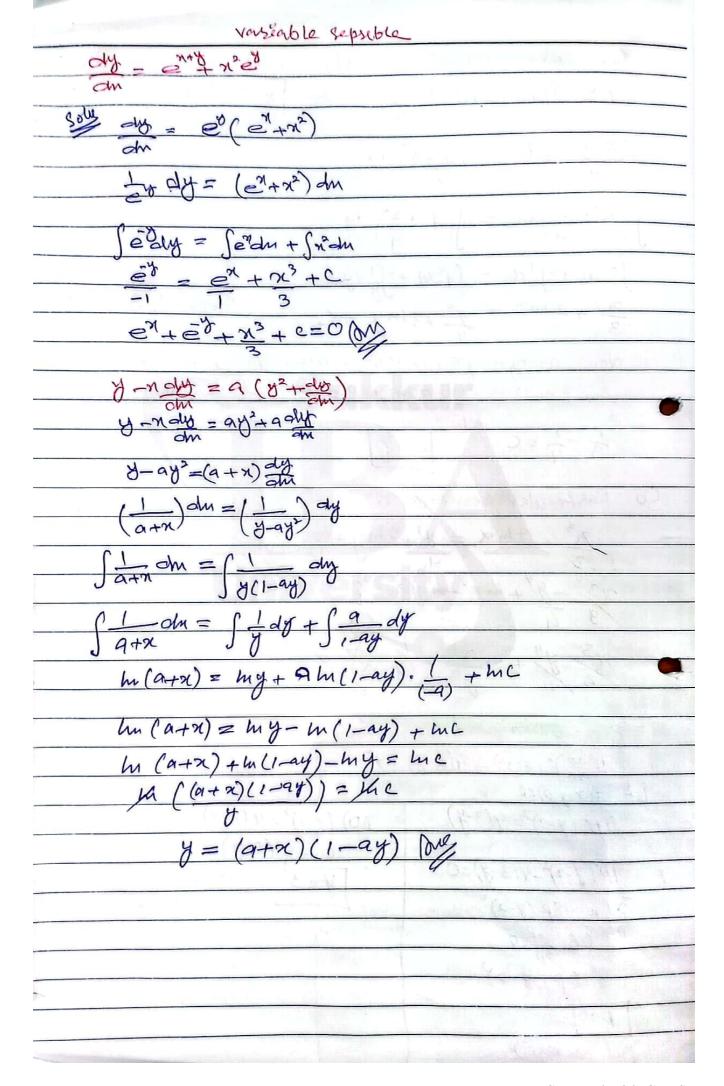


SUKKUR IBA UNIVERSITY

	Date
Student's Name:	S ID Course:
Class: CMS	No
Instructor:	D.E.
As equation C	entaining the derivatives of one or more
unknown Punch	tions, wilk respect to one or more andependent
vaciables is 8	aid to be Differential equation.
Classification	
ODE	PDE
If DE contains	only ordinary An equation involving partial
derivatives of or	ne or more unknown derivatives of one or more
functions with re	espect to a songle unknown functions of two
Independent Vari	able, it is said or more Independent variable
to be ODE.	is called PDE.
dy + 5y =	ex Pone inknown function
dn 0	dx + dy = 2x + y
d'y _ dy =	+64=0 at at
driz dx	
	dy, 164=0
	dy + 169=0
	dy + 16y=0 dy - gndependut
20 + 2° 2	dy + 16y=0
32 + 32 2 3x2 3y2	dy + 169=0
20 + 22 2 200 - 242	$\frac{dy}{dx^{2}} = 0$ $\frac{\partial y}{\partial x^{2}} = \frac{\partial y}{\partial$
order: The ord	er of differential equation (either ODE
order: The ord	dy + 16g=0
order: The ord PDE) is the ord	dy + 69=0 dy - 169=0 dy - 169=0 20 20 20 20 20 20 20 20 20
order: The ord PDE) is the ord	dy + 69=0 dy - 169=0 dy - 169=0 20 20 20 20 20 20 20 20 20
order: The ord PDE) is the ord	dy + 6y=0 dx gndependud 20 \[\frac{\partial}{2} = \frac{\partial}{2}
order: The ord PDE) is the ord	dy + 16y=0 dy - 16y=0 dy - 16y=0 \[\frac{\partial}{20} = \frac{\partial}{20} - 2\partial} \] Let of differential aggestion (either ODE) There of highest derivative in the equation. Horder afterder

and workers while a	And Address (Albi	
Degree: - Dagree of the the redical sign and order - degree	highest derivative	after removing
the redecal sign and	Fraction.	0
- / 4 //		
$\sqrt{dn^2} + 4n = 0$	order 2	
[1+ /dy 12] = /d2	K)2→degsee	
$ \left[\frac{\partial u^2}{\partial x^2} + \partial x = 0 \right] $ $ \left[\frac{\partial u^2}{\partial x} \right]^3 = \left[\frac{\partial^2 u}{\partial x^2} \right] $ $ \left[\frac{\partial u^2}{\partial x^2} \right]^3 = \left[\frac{\partial^2 u}{\partial x^2} \right] $		
		resigned An American
General form nthorder DE	in one dependent	l variable"
F(x, y, y', y",		
Independent & D variable	ependant	
		B A.
where I is a seal valu	ces function of n	+2 Variables
diy = pary	u = (n-1)	345 6 14 11 11 11 11 11 11 11 11 11 11 11 11
dx" +(1,0,0)	(y, g(n-1))	Punc
, 0	lued Confinuous Tune	H(0.)
normal form dy f Ca,	y)	
die fon	ng , y')	<u> </u>
- Anz		
0.116	0 0 5	
Solution o	7 DiE	10 11=
Solution of D.E is	a functional relation	o b/w me
variables involved whi	ch setisfies me es	guetron.
General Solution	Particular Solution	omzulas muruo
solution of D.E in which	T/ 0 /0 /	solution does not
uninumber of arbitrary constant		som toil and whitmery
is equal to the order of D.E.	are arrign to arbitrary	constant and also
also called complete solution.	constants in general	does not obtained
ex: dit = x2-3	Solution, this mi	From general solution
dy= (n2-3)dn	is called particular	by given parficular
Soly = Inohn-3 John	Solution.	rous to arbit
y= x3_3x+C)	2029	saret constant
3		is salled Engular
This is our General		Solution.
Solution		
Solutions.		





Worksheet #01

Write the order and degree of the D.E. $\frac{1}{1} - \frac{1}{2} \frac{1}{3} + \frac{1}{3} \frac{1}{3} = 0$ $11 - \left[1 + \left(\frac{dy}{dn}\right)^2\right]^{\frac{3}{2}} = \frac{d^2y}{dn}$ 前一文(学)+月(学)+月0 Q2- Obtain the D.E y2= 4a(x+a) and Ax2+By2=1 U 03- By diminsting constant find D.E y=ex (A cosx+B smx) Qu- Variable seprable $i - \frac{dy}{dx} = \frac{\chi(2\log \chi + 1)}{\sin y + \chi \cos y}$ Ans: $y \sin y = \chi^2 \log \chi + C$ 11- xy dy + x3y = - Sec (xy) Ams: 8mxy = 12x2+c 111 - cos(m+y) dy = dn Aus: y-ton (n+y) = c 1 1 - (2n2+3y2-7) x dx-(3x2+2y2-8) y dy=0 Aus; x2+y2-3=c(n2-y2-1) v- dx = tany dy Ans: x cosy = c VI- dy = 11-42 Ans: 8my = 8mx+c VII - 8 (1+2) 2dy + x VI+y2 dn =0 Aws: VI+y2+VI+n2=C

VIII - (et) cosnan + et smndy=0 m: (et) smn = c

ix - (e+2) 8mm dn - e cosndy=0 bns: (e+2) cosn = c

x - dy = 1+tom(y-x) hit[Puty=x=z] Ons: Sm(y-x) = extc