

OUe.A)	solve (x+y)dx+ (x-y)dy=0+ + 16 :9100 () 3.700
	solve $(3x^2-4)dx-xd4=0$
	solve (x2+4)dx+(43+x)dy=0. 16 19102 (6)
4	$eolye$ $(3x^3-4)dx+(4-x)d4=0$
<u>(5)</u>	50/ve (x3+y)dx + (y2+x)dy =0 10 :01/02 (6)
(6)	SOIVE (4x2-4) dx + (4 - x) 44 - 5
(7)	BOIVE (5x2+4)dx+(43+x)dy=0 102 (1)
(3)	enue $(5x^4-y)dx-xdy=0$
(g)	Solve (2xy+43) dx+ (x2+3x42) dy =0 19108 (3)
(10)	30146 (x-24+5) dx - (2x+4-1) dy =0
	solve (x+y-2)dx - (y-x-4)dy = 0
(12)	solve $9xydx + (x^2 + 3y^2) dy = 0$
<u> </u>	solve (2x-4) dx = (x-4) dy = 0
oue. B ()	solve x24 dx - (x3+43) dy =0 + 10 1000000
	501ve (x2-3xy+2y2) dx + (3x2-2xy)dy =0
	solve (xy-242)dx - (x2-3x4)dy =0
4	solve (42- x4) dx + x2 dy =0
<u> </u>	Solve = 42 dx + (x 4 +x2) dy = 0000 1 000 1 0000
9/10 6	solve (x2+42+x) dx + xy dy =0 00000000000000000000000000000000
	301/2 (x2+42+1) dx = 2xy dy =0
8	501Ve (x+443)dy - ydx =0
<u> </u>	
(10)	301/6 A(1-x7)9x - x (1+x7)91 = 00000000000000000000000000000000000
	Solve (342+4x) dx + 3xy dy =0
<u> </u>	80146 (3xy-42) dx + (x2-xy) dy =0
	solve y (xy+2x2y2) dx + x (xy-x2y2) dy =0
<u> </u>	solve (x4+44) dx - xy3 dy = 0



S		aug-38
	solve: dy + 40 - 25	The same
our c (1)	50/ve: dx + 3 - x	- A
	solve: dy 14 = 1x3	
2	solve: dy y = x	<u></u>
6	50 Ne: dy - No = 1 24 1 5 1	6
(3)	solve: dy - y = + x = +	A
(H)	solve: dy - y = x7	
	dx x	
(<u>s</u>)	solve: dy + y co+x = cosecx	
	dx + 3 CO+X = CO3CC2	
<u>(6)</u>	solve: dy + y tanx = cos2x	
	dx	0
(7)	solve: $\frac{dy}{dx} = \frac{e^{x}(x+1)}{x}$	
	dx x+1	
(8)	solve: dy + (2x) y = cosx	
	dx $(1+x^2)$ $1+x^2$	6
	solve: dy _ 1 = 2	
	dx x	
oue. D(A body originally at 80°C cools to 60°C in 201	nin
	the temperature of air being 40°C, what will	be the
	temperature of body after 40 min from origina	
	0=x66-10(61618) 36160	
The second second	in a room whose temperature is 20°C & cools	10
The state of the s	60°C in 5 min. what will be its temperature	atter
	10 min ? 0 = 10 (1x = x) 1 10 (51 1x)	
	0-14(212 12) 12 1 2 1 (21 2 x 2 1) 14 - 0	
	The state of the s	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

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posti 3	A body at temperature 100°C is placed in a room
V o o (whose temperature is 20°C & cools to 60°C in
- 0- t	5 min. Find temperature after 15 min 2
aue.E ()	Find orthogonal trajectory for y=mx with A
②	Find orthogonal trajectory of the family of my = c
3	Find orthogonal trajectory of tamily y2 = 4 ax
	Find orthogonal trajectory of family x2+42=c2
	Find orthogonal trajectory of x2+242=202 11 11
6	Find orthogonal trajectory of y=ax2.
10 m	Thick for which is hook its the temperatu
Oue.F 1	A resistance of 250 -2 & inductance of 640 H are
la n	connected in a series with battery of 500 V. Find
	the current in a circuit if i=0 dt ti=0.919
<u></u> 2	A resistance of 200 - 2 Inductionce of 20 H are
Mare dol	connected in a series with battery of 1000, find the
Q	current in a circuit it izo at 4=0.0000
21.8-	Surroce Six poverina is upic. Elpy dos tempera
	A resistance of 200 - 2 & inductance of 600 H are
	connected in series with battery of 400 V. Find the
_ \$ 2°0∂	current in the circuit if i=0 at t=0: adia A (8)
1120	is granted with covering loan thick for an
oue. G (1)	A circuit consist of resistance R - 2 & consider
	capacitance of 'c' Farad connected e.m.f E'volts
	TF 9 is the voltage of condencer at timet then
1	as 9=0 at t=0 show that 9= E(1-e+/RC)
entrige open gewind and a second a se	C



A	Annalise () and (
200 200 20	A circuit consist of Resistance of 50 12 & capacitance
	nt 0:25 connected in series with battery of 100 V
	Find charge passing through circuit if q=0 at t=0.
(3)	A circuit consist of resistance of 25-24 capacitance
5- W	of 0.5 F connected in series with battery of 14 V
-	Find the change passing through circuit it q=0 al t=0
was of -	Was primary to the first that the bridge of the control of the con
one. H 1	A steam pipe 40cm in diameter contains steam at
	150° c & its protected with a covering of 10 cm
, - 4++ F	thick for which k = 0.0012. If the temperature of
ame	ower surface of covering is 30°C, find the
Lain	temperature at a distance of 25 cm from centre of
	pipe under steady - state condition.
-	
	A pipe 20cm in diameter contain steam at 150°C &
	protected with covering of 5cm thick for which
	K=0.0025. It the temperature of the outer
April 100	surface of covering is 40°c, find the temperature
25 Y C	at a distance of 12:5cm from centre of pipe?
n Indea l	With the said that the said and
<u></u>	A pipe 20cm in diameter contain steam at 150°C &
	is protected with covering local thick for which
	K=0.0012. IF the temperature of outer surface
	covering is 30°C. Find the temperature at a
- 2246	distance of 15cm from centre of pipe ?
, , , , , , , , , , , , , , , , , , , ,	salz.
	2 - 1) - 3 - 3
the same of the same	

s stemperature in a second	MAEER'S MIT Polytechnic, Pune-38
One (I) ()	Evaluate: x.sin7x.cos4xdx 19tourova (f)
<u> </u>	Evaluate: Tx. sin5x.cos2xdx &
3	Evaluate: (x. sin3x.cos2xdx
	(2) Evoluate: (o Viv. 3 v dx
(4)	Evaluate: Sx. sin5x. cos4xdx
<u></u>	Evaluate: Jax. sinyx. cos2xdx doulov? (01)
6	Evaluale: Tx. sin7x. cos6xdx
7	Evaluate: 3x. sin x. cos x dx 0 ; 4Loulov3 (5)
ans. (1)(Evaluate: (e-x: x o d x iso good : Houlave (E)
	Evaluate: 00 e-t. +7 dz 00 10 90 10 0 (1).900
<u></u>	Evaluate: 5 et; t3/2 at la aulor adt bail (c)
	Evaluate: (% c/2+c/2) de los eurov este bail (a)
	Evaluate: set 17/2 la 10 autov adt bail (a)
6	Evaluate: 6 6-4:04 44-1) Exc / 12001013 (3)
and the second of the second of the second	



Q D	C S TID are and
7	Evaluate: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
(8)	Evaluate: (e, vxdx
	o why Son winter the about the Co
	<u> </u>
<u> </u>	Evaluate: (e Vx. 3 x dx
	o khatan yeala n) minus (u)
(10)	Evoluale: Se Vxdx
	EVOIUQUE. SE NYX OX
<u>(i)</u>	Evaluate: (e - Vx 1/x2 dx
) e . \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	0 20 2
(12)	Evaluate: \ e 3x. 4/x2 dx
(13)	Evaluate: (exida
	Set I = 300 Courters (c)
Que.(K)	Find the value of B(213)
<u>_</u>	Find the value of B(5/213)
3	
	Find the value of B (3/2, 7/2)
(F)	Find the value of B (5/2,7/2)
	1 66
6	Evaluate: \x3(1-\x)5 dx
	0

()(i)	MAEER'S MIT Polytechnic, Pune-38
7) X (1 - V x) 4 6 -
<u>(8)</u>	Evaluate: $\int_{0}^{\infty} x^{5} \left(1-\sqrt{x}\right)^{7} dx$
OUe. L ①	Show that $\int_{0}^{1} x^{\alpha} - 1 dx = \log(\alpha + 1)$
9	$\frac{\alpha}{\alpha} = \frac{\alpha}{\alpha} \left(\frac{1 - e^{-\alpha x}}{\alpha} \right) = \frac{\alpha}{\alpha} \left(\frac{\alpha}{\alpha} + 1 \right)$
	Show that $\int_{0}^{\infty} \left(1 - e^{-\alpha x}\right) e^{-x} dx = \log(\alpha + 1)$
3	Show that $\int_{0}^{\infty} e^{-x^{2}} \sin x dx = \frac{\pi}{2} - \tan^{3}x$
<u>(4)</u>	show that $\int_{0}^{\infty} \frac{1-\cos\alpha x}{\alpha} dx = \frac{\pi}{4}$
	assume that $\int_{0}^{\infty} \frac{\sin x}{x} dx = \frac{\pi i}{2}$
<u></u>	Show that $\left(\begin{array}{cccc} e^{-\chi} - e^{-\chi} & d\chi = 1 \log \left(\begin{array}{cccc} \chi^2 + 1 \\ 2 \end{array}\right)$
	T1/2d
<u> </u>	Find dx if $T(x) = \int Sin dx dx$ dx $TI/6d$
	q^2
<u></u>	Find $\frac{d}{dx}$ if $\frac{1(x)}{a} = \int_{x}^{x} \frac{dx}{dx}$