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Question No : 1 of 52



Marks: 1 (Budgeted Time 1 Min)

Question No : 2 of 52

The nature of roots of auxiliary equation deduced from Cauchy Euler equation

$$4x^2 \frac{d^2 y}{dx^2} + 8x \frac{dy}{dx} + y = 0$$

Answ	wer (Please select your correct option)	VuAns
с	Real and unequal	
c	Real and repeated	orrect
с	Complex	
c	None of them	Mada hu

Marks: 1 (Budgeted Time 1 Min)



Question No : 3 of 52

A function f is said to be convergent at a point a if it can be represented by the power series in (x-a) which has

Answer (Please select your correct option)

0	Negative radius of convergence		Made by:
C		correct	
	None of them		
c	Radius of convergence equals zero.		
С	Positive radius of convergence		

Marks: 1 (Budgeted Time 1 Min)



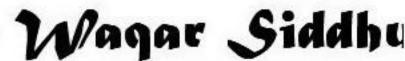
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Ques	uon	NO	: 4	01	JZ

If E(t)=0, $R \neq 0$ (E(t) is the source voltage & R is the resistance) then electric vibration of the circuit is said to be

Answer (Please select your correct option)

0	None of them	Made by:
С	Both damped and un-damped oscillation	
С	Free un-damped oscillation	
С	Free damped oscillation	correct

Marks: 1 (Budgeted Time 1 Min)



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J	ue	ST	on	N	0:	3	OT	52
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The	e quantity $Z = \sqrt{X^2 + R^2}$ is called	
Ansv	wer (Please select your correct option)	VuAns
с	Reactance of circuit	
с	Impedance of circuit	correct
с	Quasi of circuit	
с	None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)



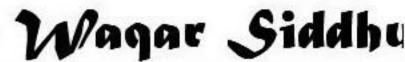
Question No : 6 of 52

The time interval between two successive maxima o	of $x(t) = Ae^{-\lambda t} \sin[\gamma$	$\left[\omega^2 - \lambda^2 + \phi \right]$ is called
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Answer (Please select your correct option)

0	Phase period	Made by:
0		correct
0	Both the period	
0	None of them	

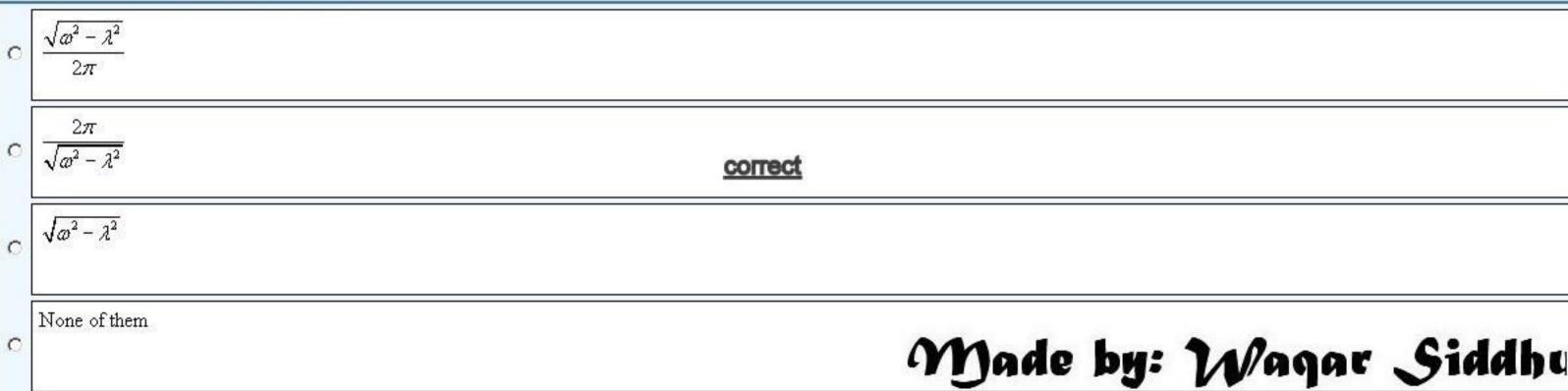
Marks: 1 (Budgeted Time 1 Min)



Question No : 7 of 52

The Quasi-frequency of the solution x(t) of free damped motion is given by the number

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

Question No : 8 of 52

C

0

0

For the equation of free damped motion
$$\frac{d^2x}{dt^2} + 2\lambda \frac{dx}{dt} + \omega^2 x = 0$$
 the roots are $m_1 = -\lambda + \sqrt{\lambda^2 - \omega^2}$ & $m_1 = -\lambda - \sqrt{\lambda^2 - \omega^2}$ If $\lambda^2 - \omega^2$
Answer (Please select your correct option) VUANS

None of them		Made
	<u>correct</u>	
Under damped		
Critically damped		

Marks: 1 (Budgeted Time 1 Min)

< 0 then system is said to be



Question No : 9 of 52

The general solution of the equation
$$x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + (x^2 - \frac{1}{25}) = 0$$
 is
Answer (Please select your correct option) VUAN
C $y = c_1 J_1(x) + c_2 J_{-1}(x)$
C $y = c_1 J_1(x) + c_2 J$

Marks: 1 (Budgeted Time 1 Min)



Question No : 10 of 52	
$J_{-\frac{2}{3}}(x) - J_{\frac{4}{3}}(x) =$	
Answer (Please select your correct option)	VuAn
$C \begin{bmatrix} 2J'_{1}(x) \\ \frac{3}{3} \end{bmatrix}$	<u>correct</u>
$C \begin{bmatrix} 2J'_{2}(x) \\ \frac{3}{3} \end{bmatrix}$	
$C \begin{bmatrix} 2J'_{4}(x) \\ \frac{3}{3} \end{bmatrix}$	
C None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)



Question No : 11 of 52

If
$$A = \begin{bmatrix} 1 & 2 & 3 \\ p & q & r & b \\ l & mn & o \end{bmatrix}$$
 then the order of matirx $A \times B$ is
Answer (Please select your correct option) VUAns
C 2×4
C 2×3
C 3×3
C None of them.
C None of them.

Marks: 1 (Budgeted Time 1 Min)



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	u	es	U	on	N	0	100	12	0	52
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The order of a matrix which contains 1 rows and m columns is

Answer (Please select your correct option) O 1×m C 2×m M×1 1

None of them

0

C

Marks: 1 (Budgeted Time 1 Min)



Question No : 13 of 52

Eigen value of the matrix
$$A = \begin{pmatrix} 3 & 4 \\ -1 & 7 \end{pmatrix}$$
 is
Answer (Please select your correct option) VUAns
C $\begin{pmatrix} 2 = 5, 3 \\ & &$

Marks: 1 (Budgeted Time 1 Min)



Question No : 14 of 52

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} \sin t$$
 is

Answer (Please select your correct option)

$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t; \quad \frac{dy}{dt} = x + y + 8\cos 2t$$

$$\frac{dx}{dt} = 3x - 7y + 4\sin t; \quad \frac{dy}{dt} = x + y + 8\cos t$$

$$\frac{dx}{dt} = 3x - 7y + 4\sin t; \quad \frac{dy}{dt} = x + y + 8\sin t$$
None of them

Marks: 1 (Budgeted Time 1 Min)



Question No : 15 of 52

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} e^{-t}$$
 is

Answer (Please select your correct option)

$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t; \quad \frac{dy}{dt} = x + y + 8\cos 2t$$

$$\frac{dx}{dt} = 3x - 7y + 4e^{-t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$

$$\frac{dx}{dt} = 3x - 7y + 4e^{t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$

$$\frac{dx}{dt} = 3x - 7y + 4e^{t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$
None of them
$$\frac{dx}{dt} = 3x - 7y + 4e^{t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$

Marks: 1 (Budgeted Time 1 Min)

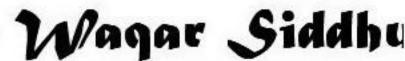


Question No : 16 of 52

The coefficient matrix of the following homogeneous system of differential equation $\frac{dx}{dt} = 3x + 2y$, $\frac{dy}{dt} = x + 2y$ is

Answer (Please select your correct option)	VuAns
$ \begin{array}{c} $	
$\begin{bmatrix} 3 & 1 \\ 2 & 2 \end{bmatrix}$	
$C \begin{bmatrix} 3 & 2 \\ 1 & 2 \end{bmatrix}$	correct
C None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)



Que	Question No : 17 of 52			
The	he matrix $A = \begin{bmatrix} 1 & -2 & -2 \\ -2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ has eigen values $\lambda = -1, -1, 5$ where $\lambda = -1$ is a			
Ansv	swer (Please select your correct option)	VuAns		
С	Single root of A			
с	triple root of A	rrect		
С	double root of A			
0	None of them	Made by:		

Marks: 1 (Budgeted Time 1 Min)



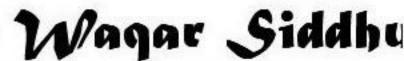
Question No : 18 of 52

By applying the Operator method or systematic elimination on a system of linear homogeneous or linear non-homogeneous differential equations we always get a

Answer (Please select your correct option)

С	None of them	C	Made by:
c			
С	Double linear differential equation		
С	Single linear differential equation	correct	

Marks: 1 (Budgeted Time 1 Min)



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If L denote the linear differential operators with constant coefficients, then $L_1L_4 - L_2L_3$ represents the

Answer (Please select your correct option)

С	None	e of them		Mode hu:
0		$\left. \begin{array}{c} L_2 \\ L_4 \end{array} \right $	COITEC	<u>t</u>
c	L ₁ L ₄	$\left. \begin{array}{c} L_3 \\ L_2 \end{array} \right $		
C	$\begin{vmatrix} L_1 \\ L_4 \end{vmatrix}$	$\left. \begin{array}{c} L_2 \\ L_3 \end{array} \right $		

Marks: 1 (Budgeted Time 1 Min)



uestion No : 20 of 52			
The matrix $\begin{bmatrix} 2 & 6 \\ 1 & 3 \end{bmatrix}$ is			
Answer (Please select your correct option)	VuAns		
C Singular matrix	correct		
C Non singular matrix			
C Diagonal matrix			
C Scalar Matrix	Made by:		

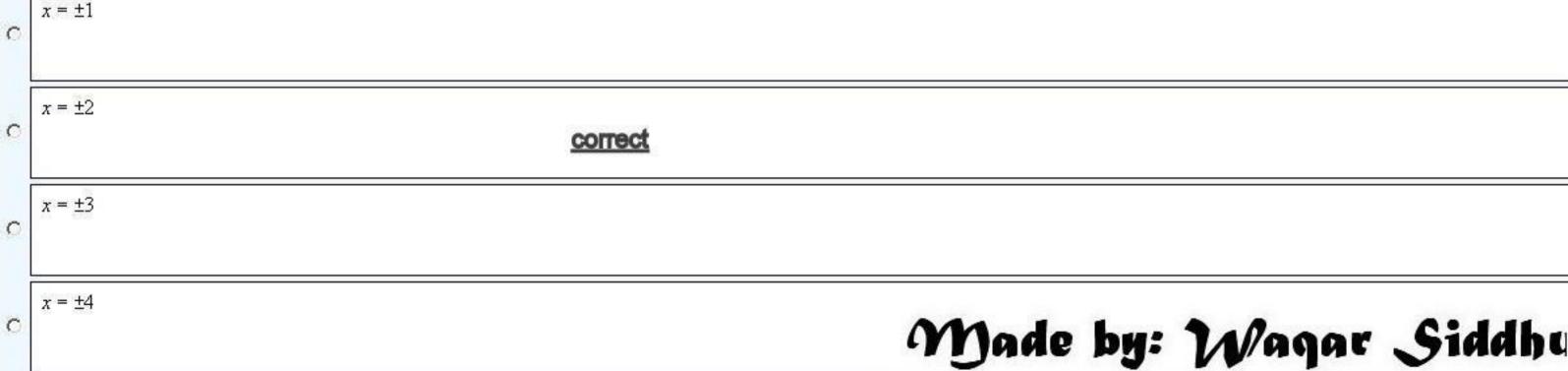
Marks: 1 (Budgeted Time 1 Min)



Question No : 21 of 52

The Differential Equation $(x^2 - 4)y'' - 10xy' + y = 0$ has singularity at





Marks: 1 (Budgeted Time 1 Min)

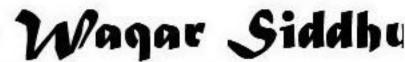
Question No : 22 of 52

Operator method is the method of the solution of a system of linear homogeneous or linear non-homogeneous differential equations which is based on the process of systematic elimination of the

Answer (Please select your correct option)

C	Dependent variables	<u>correct</u>	
С	Independent variable		
С	Choice variable		
С	None of them		Made bu:

Marks: 1 (Budgeted Time 1 Min)



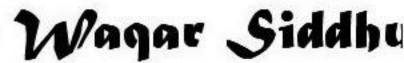
Question No : 23 of 52

The non-zero solution of the system exists only when

Answer (Please select your correct option)

C	$\det(A - \lambda I) = 1$		
c	$\det(A - \lambda I) = 0$	correct	
0	$\det(A - \lambda I) = -1$		
c	$\det(A - \lambda I) \neq 0$		Made by:

Marks: 1 (Budgeted Time 1 Min)



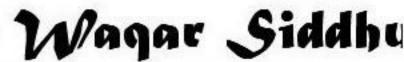
Question No : 24 of 52

The solution of the linear first order differential equation $\frac{dy}{dx} - 2y = 0$ is

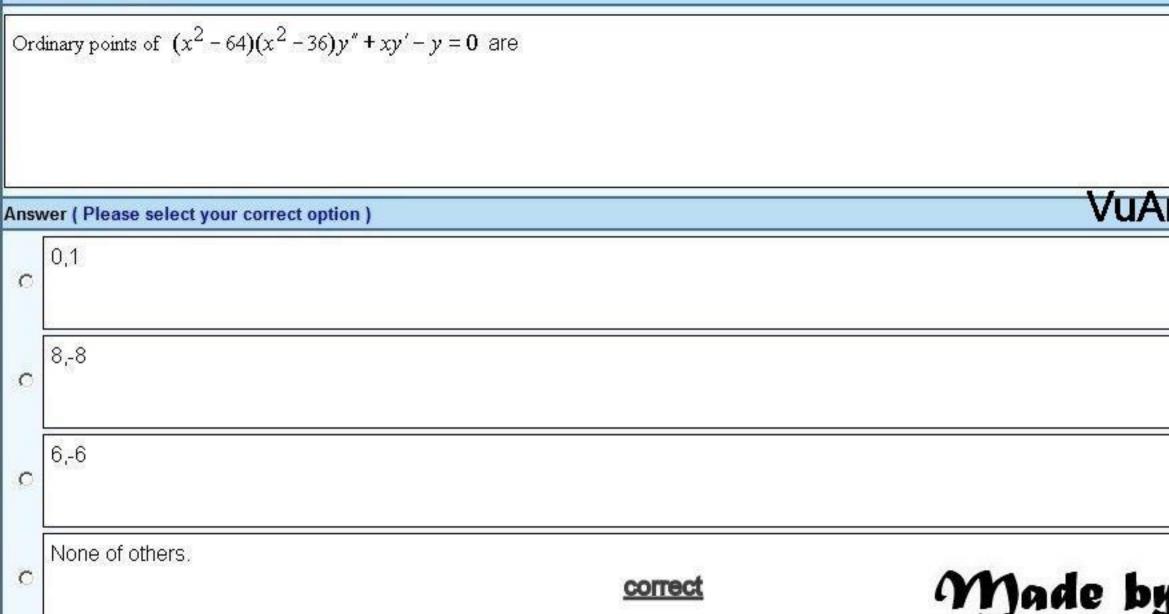
Answer (Please select your correct option)

$C \qquad y = e^{2x+c}$	correct
$C \qquad y = \sum_{n=0}^{\infty} \frac{x^n}{4n!}$	
C Both 1) and 2)	
c None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)



Question No : 25 of 52



Marks: 1 (Budgeted Time 1 Min)



Question No : 26 of 52

Ir-regular singular point of the equation $(x^2 - 4)^2 y'' + (x - 2)y' + y = 0$ is Answer (Please select your correct option) x = 2C x = -2C correct x= -2, 2 C None of them C

Marks: 1 (Budgeted Time 1 Min)

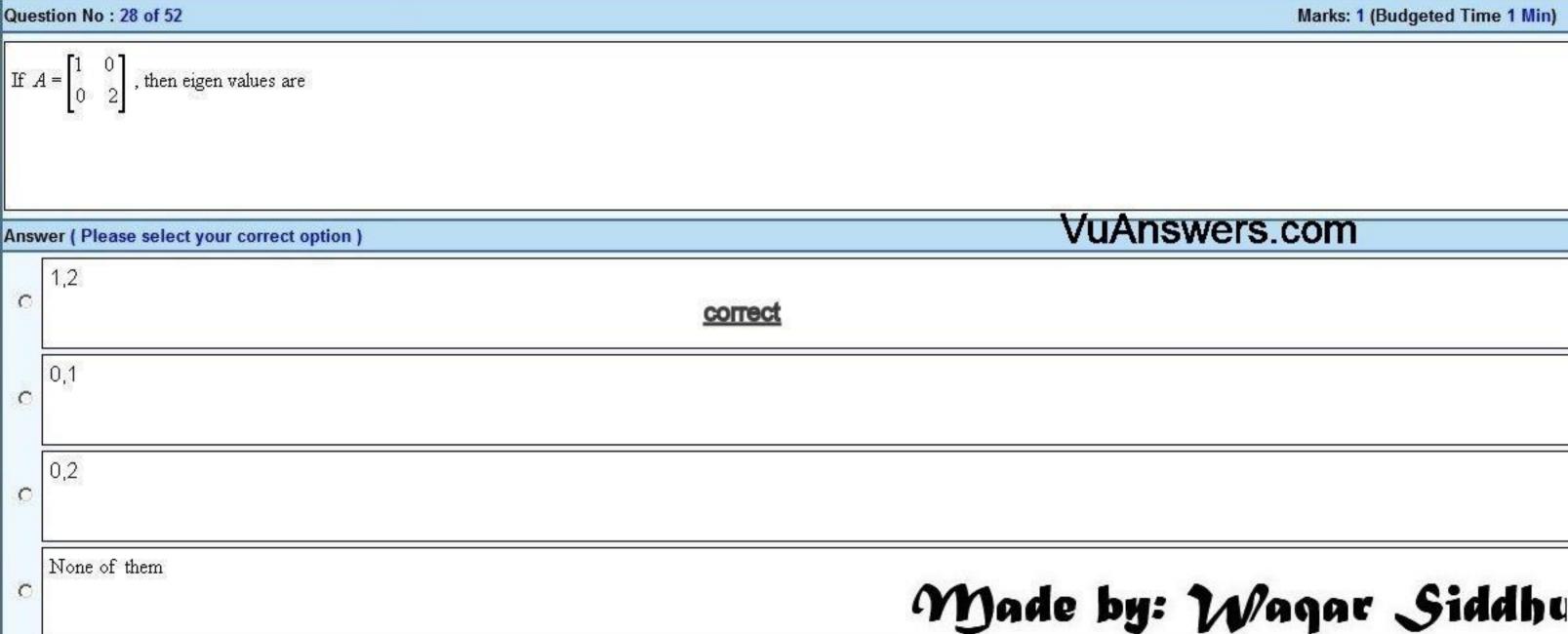


Question No : 27 of 52

The	e matrix $A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$ has	
Ansv	wer (Please select your correct option)	VuAns
c	Real and unequal value	
С	Repeated & real eigen value	correct
С	Complex eigen value	
С	None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)

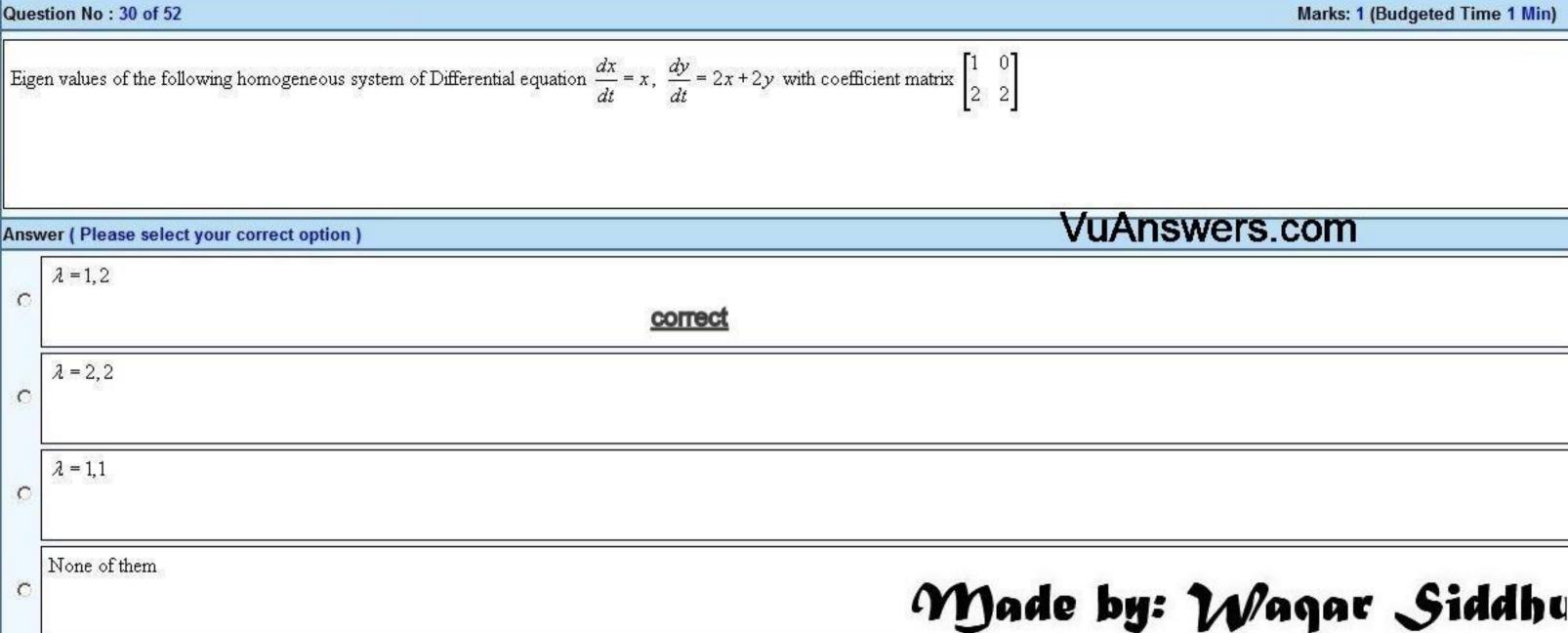




Que	Question No : 29 of 52		
Let	λ be an eigen value of a non zero square matrix A. Then the equation $det(A - \lambda I) = 0$ is called		
Ansv	ver (Please select your correct option)		
c	Trivial equation		
С	Characteristics equation		
c	Non-trivial equation		
С	None of them		

Marks: 1 (Budgeted Time 1 Min)





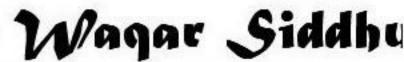
Question No : 31 of 52

Which of the following may not be considered as integration technique

Answer (Please select your correct option)

	By substitutions		
0			
0	By Partial Fractions	correct	
c	None of these		Made by:

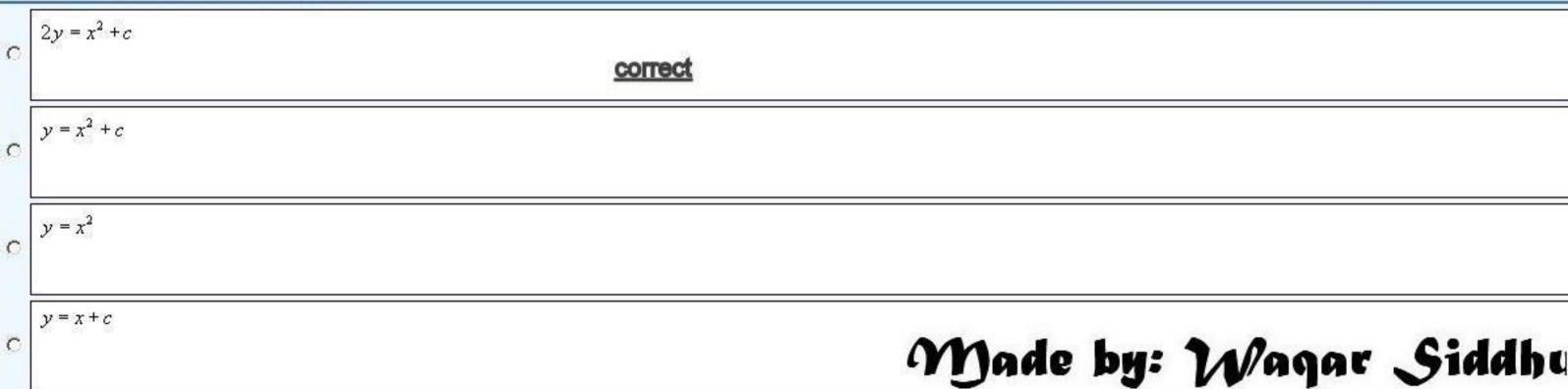
Marks: 1 (Budgeted Time 1 Min)



Question No : 32 of 52

Which of the following equations satisfy the differential equation $\frac{dy}{dx} = x$

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

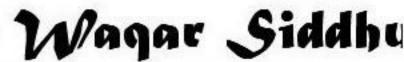
Question No : 33 of 52

The differential equation $(3x^2y+2) dx + (x^3 + y) dy = 0$ is -----.

Answer (Please select your correct option)

c	Exact	correct
c	Non-exact	
c	Separable	
c	Homogenous	Made by:

Marks: 1 (Budgeted Time 1 Min)

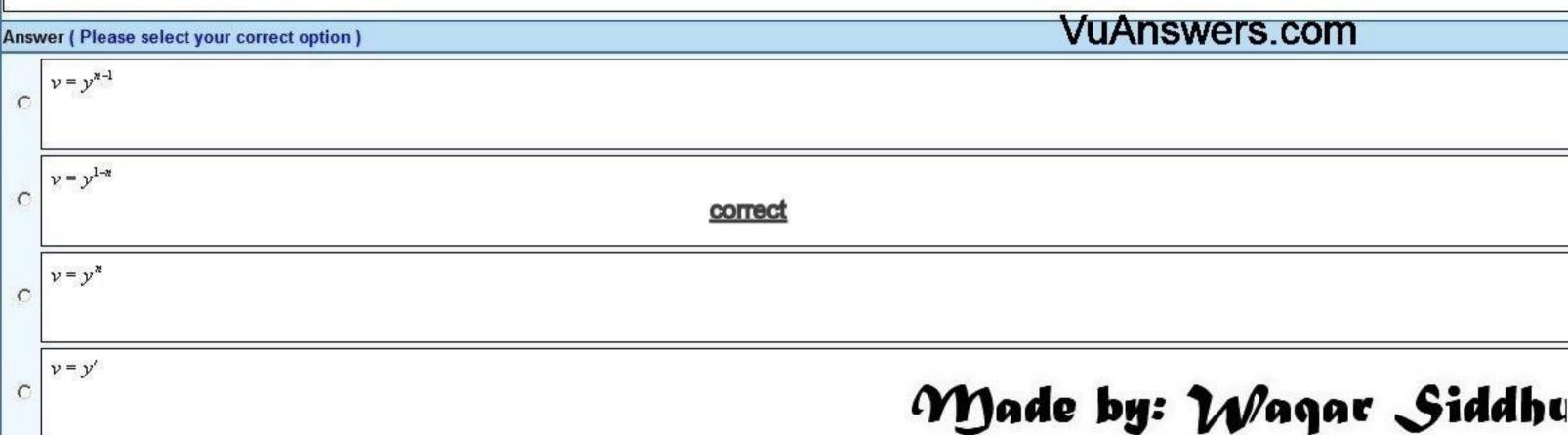


Question No : 34 of 52

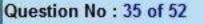
In order to change the Bernoulli Equation

 $\frac{dy}{dx} + p(x)y = q(x)y^n$

into linear differential equation, we choose ----.



Marks: 1 (Budgeted Time 1 Min)

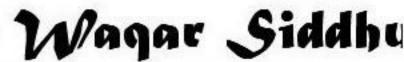


A differential equation of the form
$$\frac{dy}{dx} = f(x, y)$$
 is said to be homogeneous if $f(tx, ty) = ----$.

Answer (Please select your correct option)

c	f(x,y)	correct
0	<i>f</i> (<i>x</i>)	
0	f(y)	
c	C	Made by:

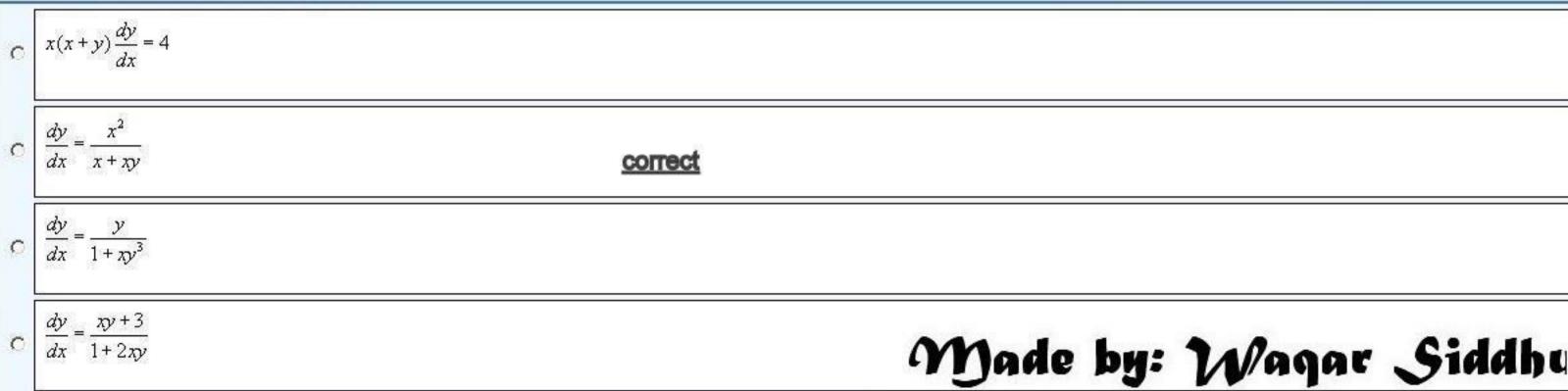
Marks: 1 (Budgeted Time 1 Min)



Question No : 36 of 52

The differential equation ------ is separable.

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

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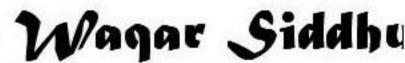
The differential equation ------ is not separable.

Answer (Please select your correct option)

с	$\frac{dy}{dx} = \frac{2xy+3}{3+4xy^2}$	correct
с	$\frac{dy}{dx} = \frac{x+1}{x+xy^2}$	
с	$\frac{dy}{dx} = \frac{1}{x^2y + 4y}$	
с	$\frac{dy}{dx} = 1 + y + x + xy$	Made by:

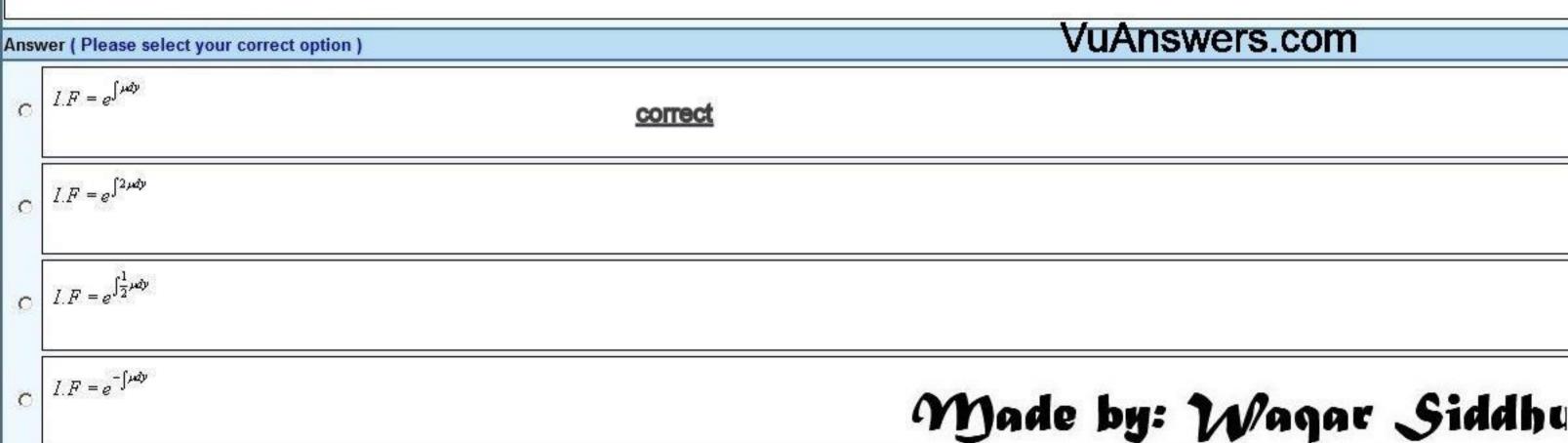
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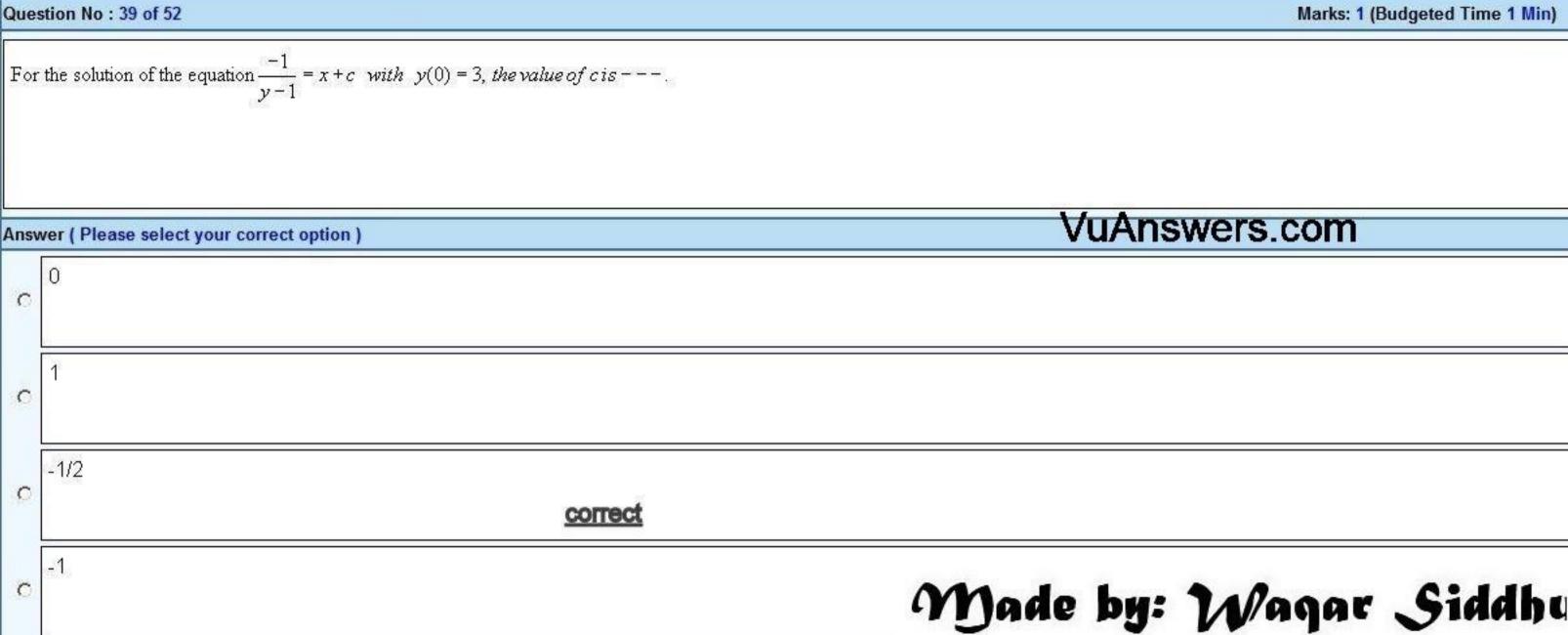


Question No : 38 of 52

If the equation
$$M(x, y)dx + N(x, y)dy = 0$$
 is not exact and $\mu = \frac{N_x - M_y}{M}$ is a function of y only, then the integrating factor is given by------



Marks: 1 (Budgeted Time 1 Min)



Question No : 40 of 52

If
$$e^{2x}(c_1\cos 3x + c_2\sin 3x)$$
 is the solution of $\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + 13y = 0$, then which of the following is the most accurate option for $\frac{d^2y}{dx^2} - 4\frac{dy}{dx}$
Answer (Please select your correct option) VUANS
C Its general form of the particular solution will be $Ae^{2x} + B\sin x + C\cos x$.
C Its general form of the particular solution will be $e^{2x}(A\sin x + B\cos x)$.
C Its general form of the particular solution will be $e^{2x}(Ax\sin x + Bx\cos x)$.
C Its general form of the particular solution will be $e^{2x}(Ax\sin x + Bx\cos x)$.

Marks: 1 (Budgeted Time 1 Min)

 $r' + 13y = e^{2x} \sin 3x$?

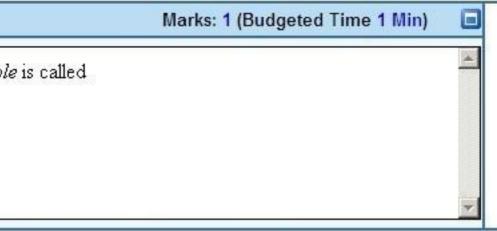


)ue	estion No : 1 of 52	
The	e nature of the roots of the following D.E $x^2 \frac{d^2 y}{dx^2} - 5x \frac{dy}{dx} + 8y = 0$ is	
ns	wer (Please select your correct option)	VuAr
0	None of them	
0	real and distinct	
0	repeated roots	
0	complex or imaginary	<u>corre</u> Made





Que	Question No : 2 of 52	
An	An infinite series of (x-a) in the form of $c_0 + c_1(x-a) + c_2(x-a)^2 + \dots$ where the coefficients c_0, c_1 ,	c ₂ ,and a are constants and xis a variabl
۱ns	Answer (Please select your correct option)	VuAn
0	C Real series	
0	C Analytic series	
0	C Power series	<u>correct</u>
0	C None of them	Made





Que	stion No : 3 of 52	
In ti	he infinite series of (x-a) which can be written as $\sum_{n=0}^{\infty} c_n (x-a)^n = c_0 + c_1 (x-a) + c_2 (x-a)^2 + \dots$ the number a is called the	le
Ansv	wer (Please select your correct option)	VuAr
0	Radius of power series	
0	Centre of power series <u>correct</u>	
С	Base of power series	
С	None of them	Made





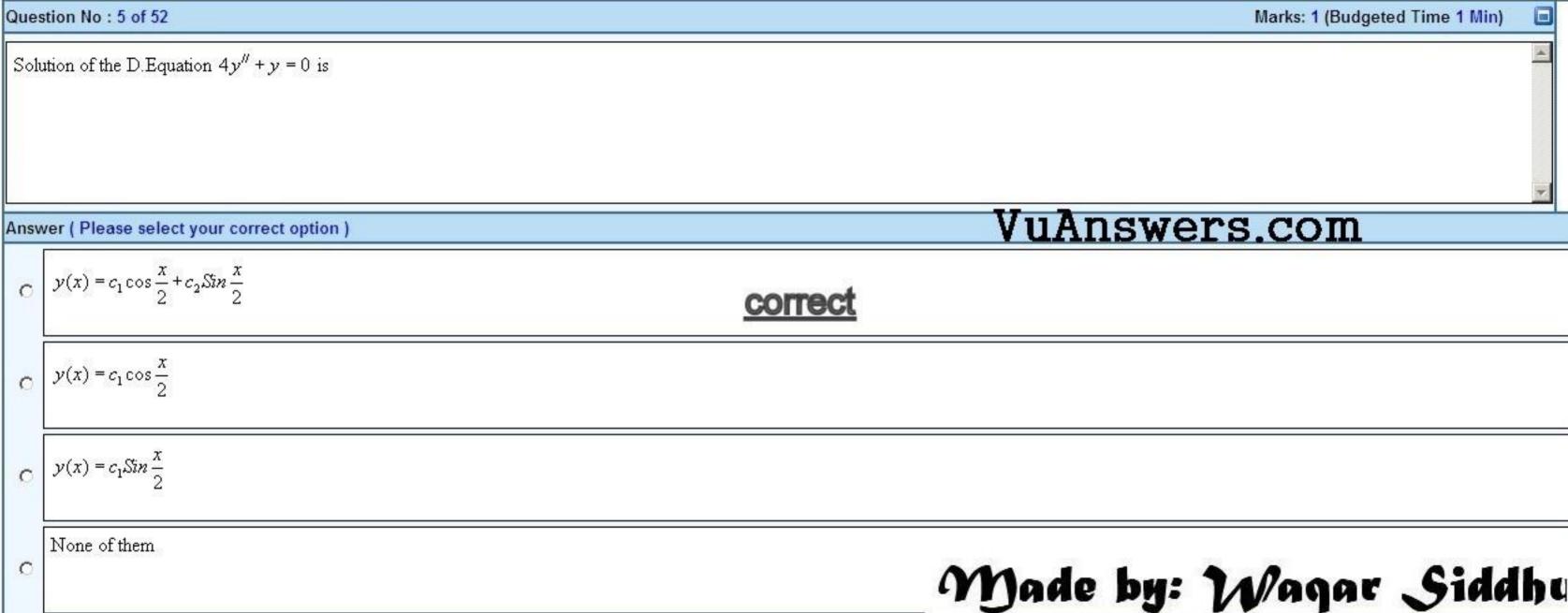
Question No : 4 of 52	No: 4 of 52
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The g	given series $\sum_{n=1}^{\infty} \frac{1}{\sqrt{n}} (-1)^n$ is an		
Answe	er (Please select your correct option)		VuAn
0	Alternating series	<u>correct</u>	
0	Divergent series		
0	Exponential series		
0	None of them		Made



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Que	stion No : 6 of 52	
Afi	inction f is said to be convergent at a point a if it can be represented by the power series in (x-a) which has	
Ansv	ver (Please select your correct option)	VuAr
c	Negative radius of convergence	
0	Positive radius of convergence	
0	Radius of convergence equals zero.	
С	None of them	Made





Question No : 7 of 52

For the equation of free damped motion
$$\frac{d^2x}{dt^2} + 2\lambda \frac{dx}{dt} + \omega^2 x = 0$$
 the roots are $m_1 = -\lambda + \sqrt{\lambda^2 - \omega^2}$ & $m_1 = -\lambda - \sqrt{\lambda^2 - \omega^2}$ If $\lambda^2 - \omega^2$

0	Ivone of them	Made
0	None of them	correct
	Under damped	
0	Critically damped	
0	Over damped	

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)ue:	stion No : 8 of 52		
The	e time interval between two successive maxima of $x(t) = Ae^{-\lambda t} \sin[\sqrt{\varpi^2 - \lambda^2} + \phi]$ is called		
nsv	wer (Please select your correct option)		VuAr
С	Quasi-period	<u>correct</u>	
0	Phase period		
С	Both the period		
c	None of them		Made





Question No : 9 of 52 The Quasi-frequency of the solution **x(t)** of free damped motion is given by the number VuAnswers.com Answer (Please select your correct option) $\sqrt{a^2}$ C 2π 2π O correct $\sqrt{\omega^2 - \lambda^2}$ $\sqrt{\omega^2 - \lambda^2}$ C None of them C





Que	stion No : 10 of 52	
The	e given differential equation $\frac{d^2x}{dt^2} + 5\frac{dx}{dt} + 4x = 0$ is	
Ansv	wer (Please select your correct option)	VuAr
o	Over damped	correct
c	Critically damped	
С	Under damped	
с	None of them	Made





Que	stion No : 11 of 52	
Wh	ich of the rule in matrices under multiplication does not hold true?	
Ansv	ver(Please select your correct option)	VuAr
0	Commutative law	
0	Associative law	
c	Identity law	
c	None of them	Made





Question No: 12 of 52

If
$$A = \begin{bmatrix} 1 & 2 & 3 \\ 5 & 6 & 7 \end{bmatrix} \& B = \begin{bmatrix} x & y & z & a \\ p & q & r & b \\ l & mn & o \end{bmatrix}$$
 then the order of matirx $A \times B$ is
Answer (Please select your correct option) VUAD
C 2×4
C 2×3
C 3×3
C None of them.





Que	Question No : 13 of 52		
The	order of a matrix which contains 1 rows and m columns is		
Ansv	ver (Please select your correct option)	VuAn	
c	1×m	correct	
C	2×m		
0	$m \times 1$		
o	None of them	Made	





Que	Question No : 14 of 52		
Eig	en value of the matirx $A = \begin{pmatrix} 3 & 4 \\ -1 & 7 \end{pmatrix}$ is		
Ansv	wer (Please select your correct option)		VuAr
o	λ = 5,3		
c	λ = 5,5		
С	$\lambda = 3, 4$		
С	None of them	<u>correct</u>	Made





Question No : 15 of 52

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} e^{-t}$$
 is

Answer (Please select your correct option)

$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t; \quad \frac{dy}{dt} = x + y + 8\cos 2t$$

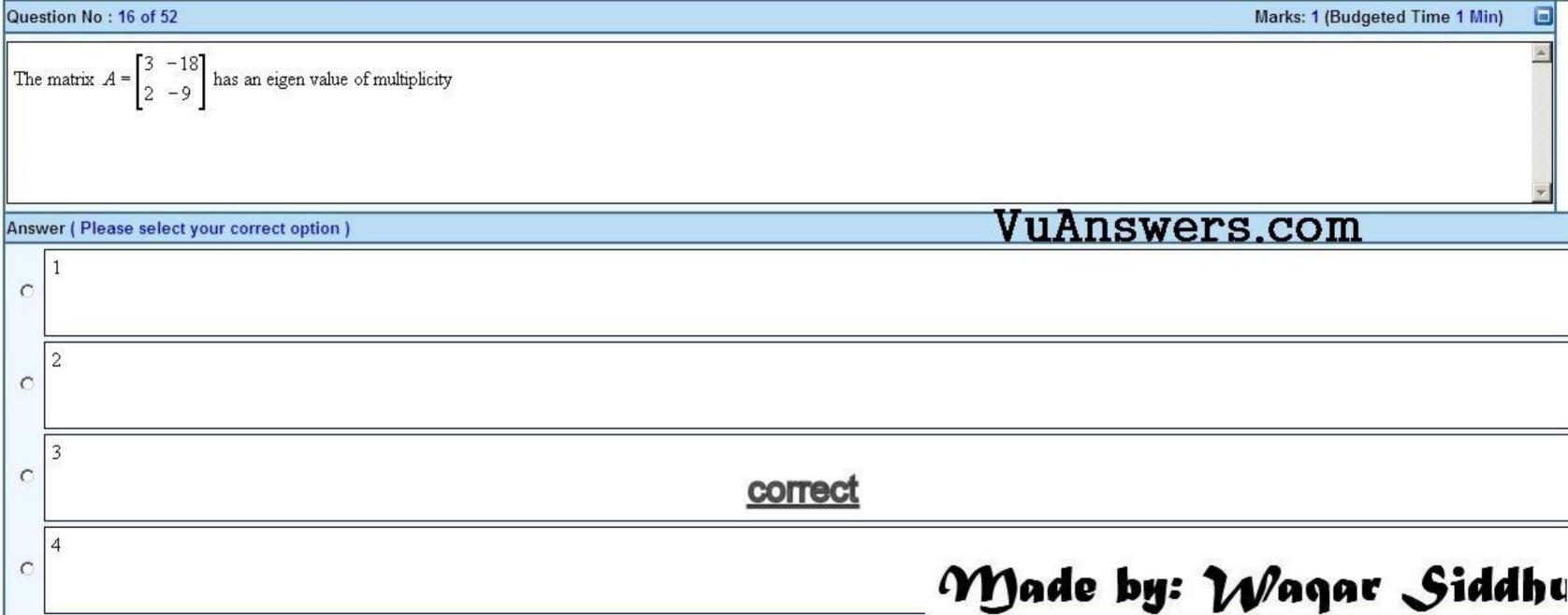
$$\frac{dx}{dt} = 3x - 7y + 4e^{-t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$

$$\frac{dx}{dt} = 3x - 7y + 4e^{t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$
None of them



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Que	Question No : 17 of 52		
The	e matrix $A = \begin{bmatrix} 1 & -2 & -2 \\ -2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ has eigen values $\lambda = -1, -1, 5$ where $\lambda = -1$ is a		
Ansv	wer (Please select your correct option)		VuAn
0	Single root of A		
c	triple root of A	correct	
с	double root of A		
с	None of them		Made



ISWers.com



Que	stion No : 18 of 52	
The	differential equation $2\frac{dy}{dx} + x^2y = 2x + 3, y(0) = 5$ is	
Ansv	ver (Please select your correct option)	VuAn
0	Linear	
0	Nonlinear <u>correct</u>	
0	Linear with fixed constants	
c	Undeterminable to be linear or nonlinear	Made





)ue:	stion No : 19 of 52	
If A	is a square matrix and its determinant is zero, then	
nsv	wer (Please select your correct option)	VuAr
0	A is singular matrix.	
C	A is non singular matrix.	
0	A is scalar matrix.	correct
С	A is diagonal matrix.	Made





Ques	luestion No : 20 of 52			
The	Differential Equation $(x^2 + 1)y'' + 2xy' + 6y = 0$ has singularity at			
Ansv	ver(Please select your correct option)	VuAr		
0	$x = \pm 1$			
0	x = ±i <u>correct</u>			
0	$x = \pm 2$			
С	$x = \pm 2i$	Made		





Question No : 21 of 52

The	e Differential Equation $(x^2 - 4)y'' - 10xy' + y = 0$ has singularity at		
Ansv	wer (Please select your correct option)	VuA	n
o	$x = \pm 1$		
0	$x = \pm 2$	<u>correct</u>	
0	$x = \pm 3$		
с	$x = \pm 4$	Made	P





Question No : 22 of 52		
Any	where differential equation of the form $a_n x^n \frac{d^n y}{dx^n} + a_{n-1} x^{n-1} \frac{d^{n-1} y}{dx^{n-1}} + L + a_1 x \frac{dy}{dx} + a_0 y = g(x)$ where $a_0, a_1, a_2, \dots, a_n$ are constants. is called	
Ansv	ver (Please select your correct option)	
С	Homogeneous equation	
c	Polar equation	
С	Equi-dimensioanl equation	
С	None of them	





Ques	Juestion No : 23 of 52		
Ton	reduce any Cauchy –Euler differential equation into a differential equation with constants coefficients we often use substitutio	'n	
Ansv	ver(Please select your correct option)	VuAi	
С	$y = x^3$		
0	None of them		
C	x = e ^t		
С	$y = e^t$	Made	





Que	Question No : 24 of 52		
Ar	ectangular arrangement of numbers or functions enclosed in the square brackets is called		
Ansv	ver(Please select your correct option)	VuAn	
0	Equation		
0	derterminant		
С	Matrix <u>correct</u>		
С	None of them	Made	





Question No : 25 of 52

For eigen values
$$\lambda = 5,5$$
 of a matrix $A = \begin{pmatrix} 3 & 4 \\ -1 & 7 \end{pmatrix}$, there exists eigen vectors.
Answer (Please select your correct option)
C infinite
C one
C two
C two
C three



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Question No : 26 of 52	

If wroskian of the solution vectors $X_1 \& X_2$ is zero, then vectors are

Answer (Please select your correct option)

С	Linearly Independent	correct
0	Linearly dependent	
c	None of them	
0	Parallel	Made



VuAnswers.com



Question No : 27 of 52			
If 2	$4 = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$, then eigen values are		
Ansv	ver (Please select your correct option)		VuAn
С	1,2	<u>correct</u>	
c	0,1		
c	0,2		
с	None of them	ŋ	Yade



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Que	Question No : 28 of 52				
Let	λ be an eigen value of a non zero square matrix A. Then the equation $det(A - \lambda I) = 0$ is called				
Ansv	wer (Please select your correct option)	VuAn			
С	Trivial equation				
C	Characteristics equation				
С	Non-trivial equation				
С	None of them	Made			





Question No : 29 of 52

Giv	en vectors $X_1 = \begin{bmatrix} 1 \\ -1 \end{bmatrix} e^{-2t}$, $X_2 = \begin{bmatrix} 3 \\ 5 \end{bmatrix} e^{6t}$ form a	
Ansv	wer (Please select your correct option)	VuAn
o	Linear set of solution of the system on $(-\infty, +\infty)$	<u>correct</u>
0	Fundamental set of solution of the system on $(-\infty, +\infty)$	
c	Partial set of solution of the system on $(-\infty, +\infty)$	
c	None of them	Made





Question No : 30 of 52

.....& are dependent variables in differential equations $\frac{dy}{dt} = 2x$, $\frac{dx}{dt} = 3y$

t	
C x, y	
c ^{y,t}	
C x, t	
Answer (Please select your correct option)	VuAn





Que	estion No : 31 of 52	
Eige	gen values of the following homogeneous system of Differential equation $\frac{dx}{dt} = x$, $\frac{dy}{dt} = 2x + 2y$ with coefficie	ent matrix $\begin{bmatrix} 1 & 0 \\ 2 & 2 \end{bmatrix}$
Ansv	wer (Please select your correct option)	VuAn
0	<i>λ</i> = 2,2	
0	$\lambda = 1, 1$	
С	None of them	
С	λ = 1, 2 <u>correct</u>	Made





Que	stion No : 32 of 52		
The	general solution of the second order differential equation contains		
Ansv	ver(Please select your correct option)		VuAn
0	no constant		
С	one constant	<u>correct</u>	
С	two constants		
o	three constants		Made





Que	stion No : 33 of 52	
A s	solution obtained by giving particular values to the arbitrary constant	s in the General Solution of a differential equation is called a
Ansv	wer (Please select your correct option)	VuAi
0	Singular solution	
0	Particular solution	correct
c	Explicit Solution	
С	None of these	Made

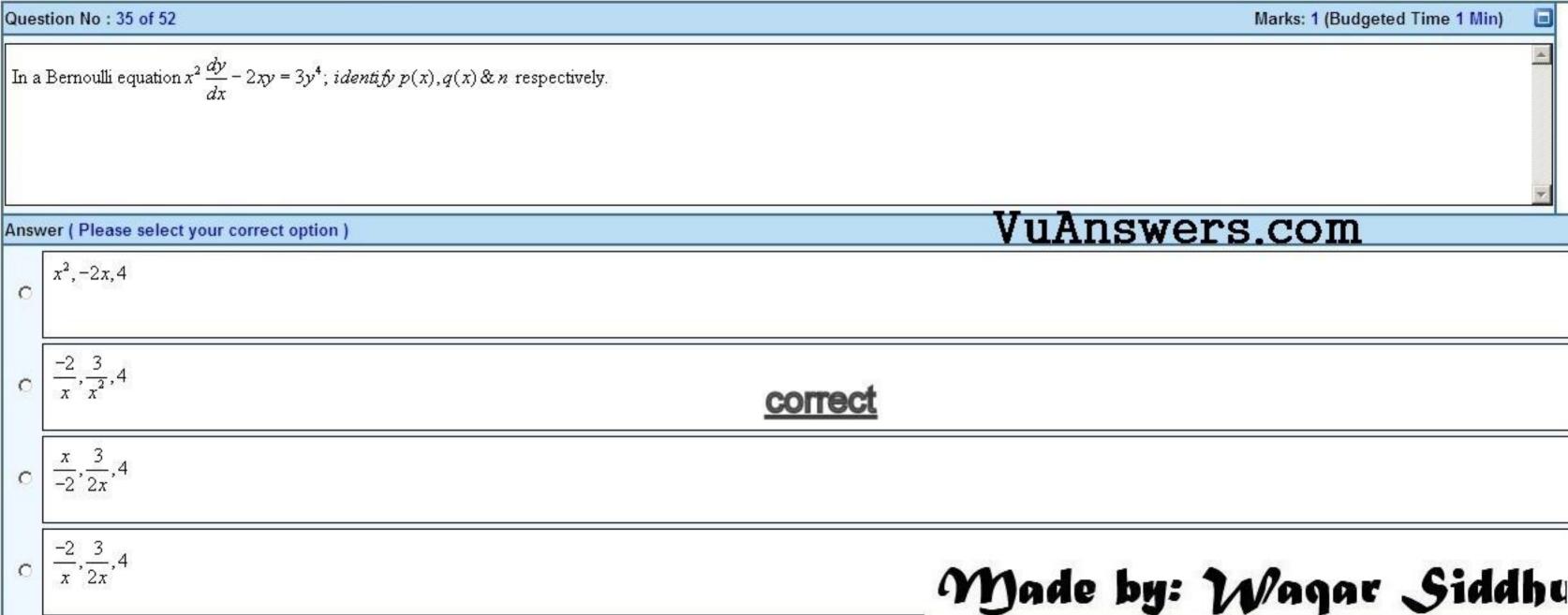


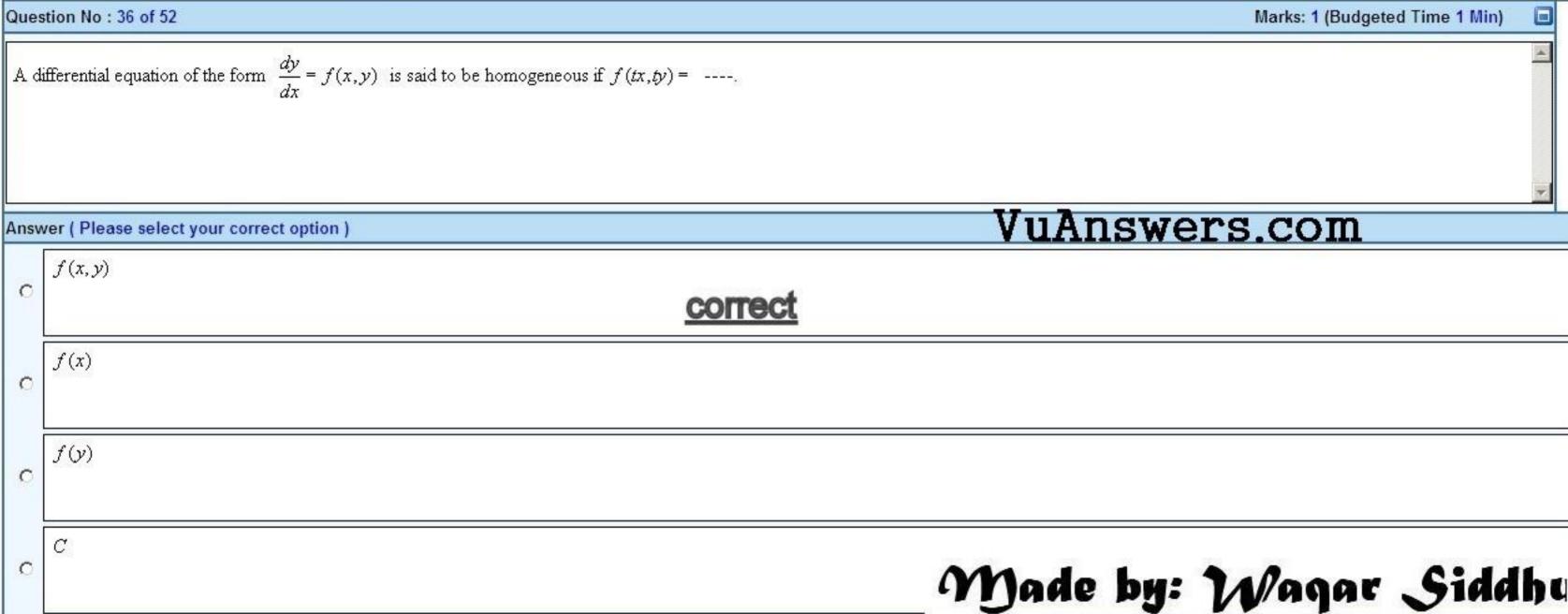


Question No : 34 of 52 If $\frac{dy}{dx} = e^x$, then $y = \dots$ VuAnswers.com Answer (Please select your correct option) (e^{-x} C $e^{x} + C$ Ô correct ln x C х C











Que	stion No : 38 of 52	
If th	e tangent lines of two curves are perpendicular at their point of intersection then both the curves are	
Ansv	ver(Please select your correct option)	VuAn
0	Non-intersecting curves	
0	Parallel curves	
С	Orthogonal curves <u>correct</u>	
0	Intersecting curves	Made

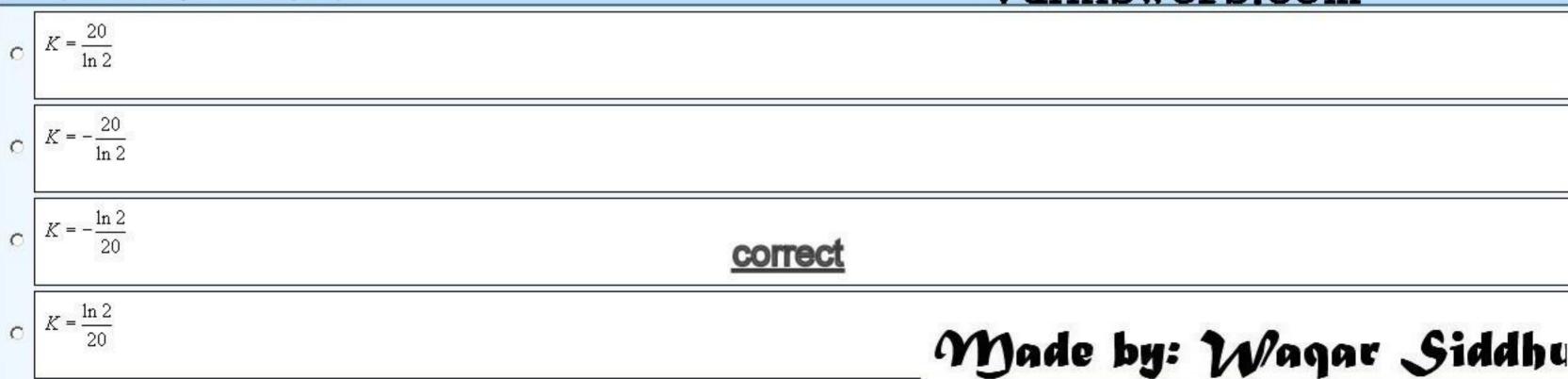




Question No : 39 of 52

An isotope has half life of 20 days. The value of constant k will be.....

Answer (Please select your correct option)

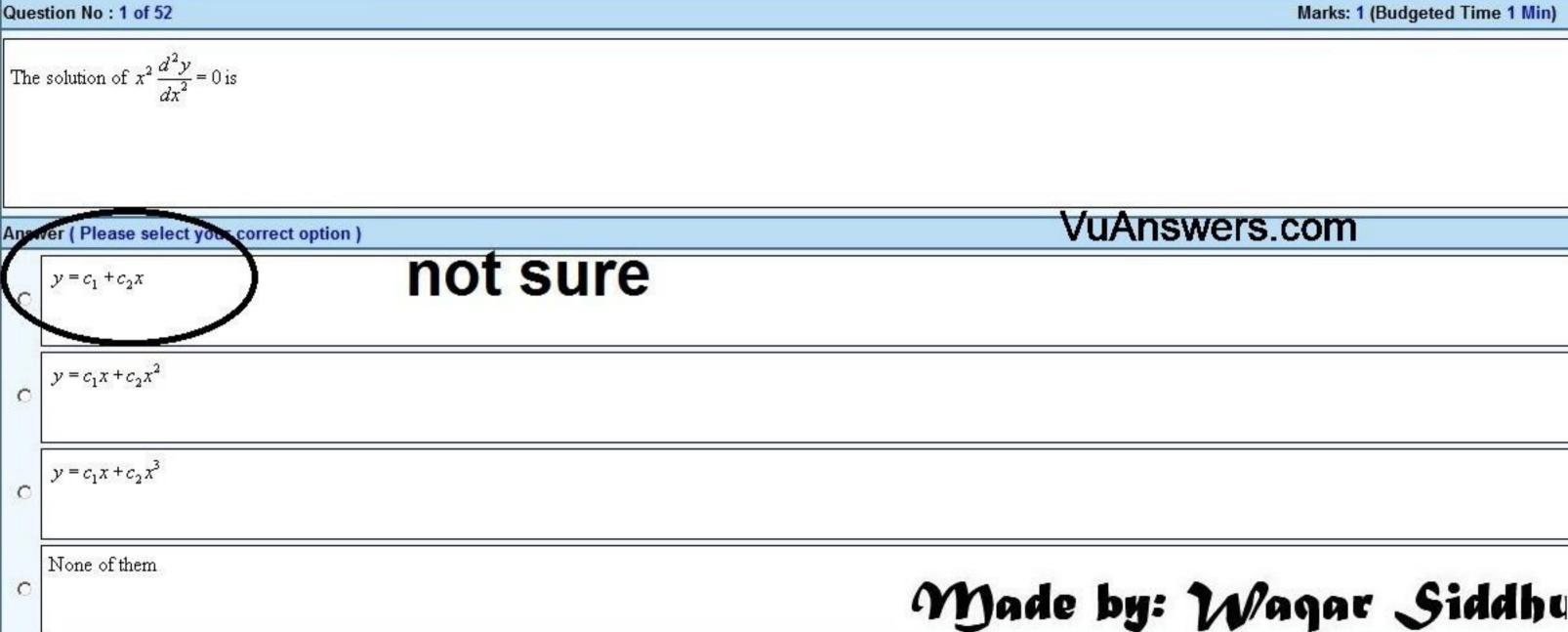




Question No: 40 of 52 If $m^2 + 6m + 8 = (m+4)(m+2)$, then $D^2 + 6D + 8(D)$ is a linear differential operator) is equivalent to _____ Answer (Please select your correct option) (m+4)(m+2)(D+4)(D+2)correct D^2 C ((D+4)(D+2))y







Question No : 2 of 52

The nature of roots of auxiliary equation deduced from Cauchy Euler equation

$$4x^2 \frac{d^2 y}{dx^2} + 8x \frac{dy}{dx} + y = 0$$

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

Que	stion No : 3 of 52		
A fi	unction f is said to be convergent	at a point a if it can be represen	nted by the power series in (x-a) which has
Ansv	wer (Please select your correct	option)	
Positive radius of convergence not sure lecr 30, line			
o	Radius of convergence equals z	ero.	
С	None of them		

Negative radius of convergence

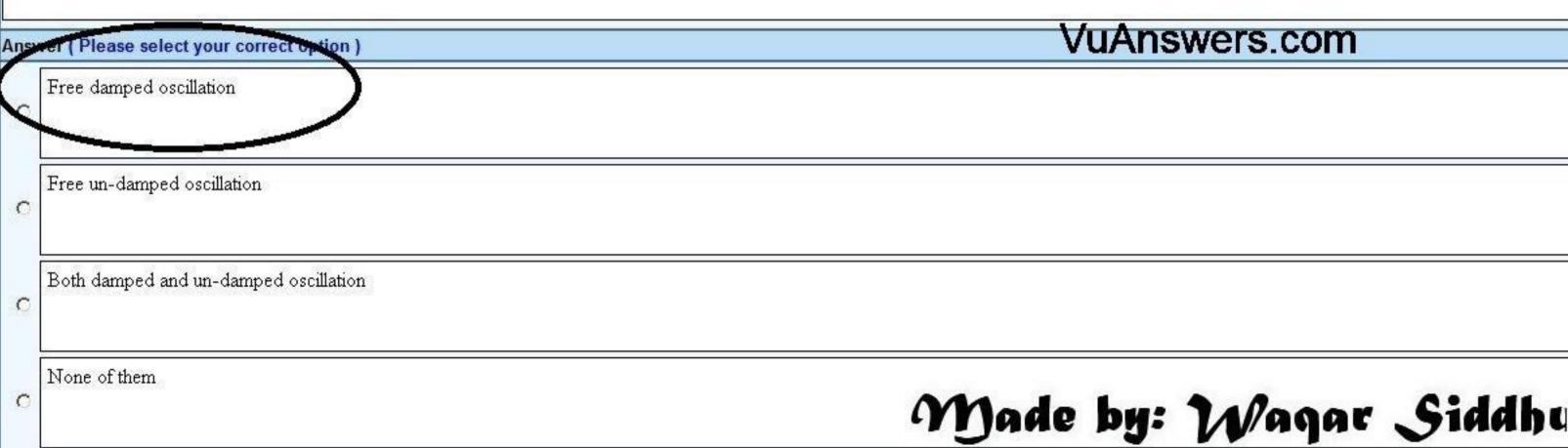
C

Marks: 1 (Budgeted Time 1 Min)

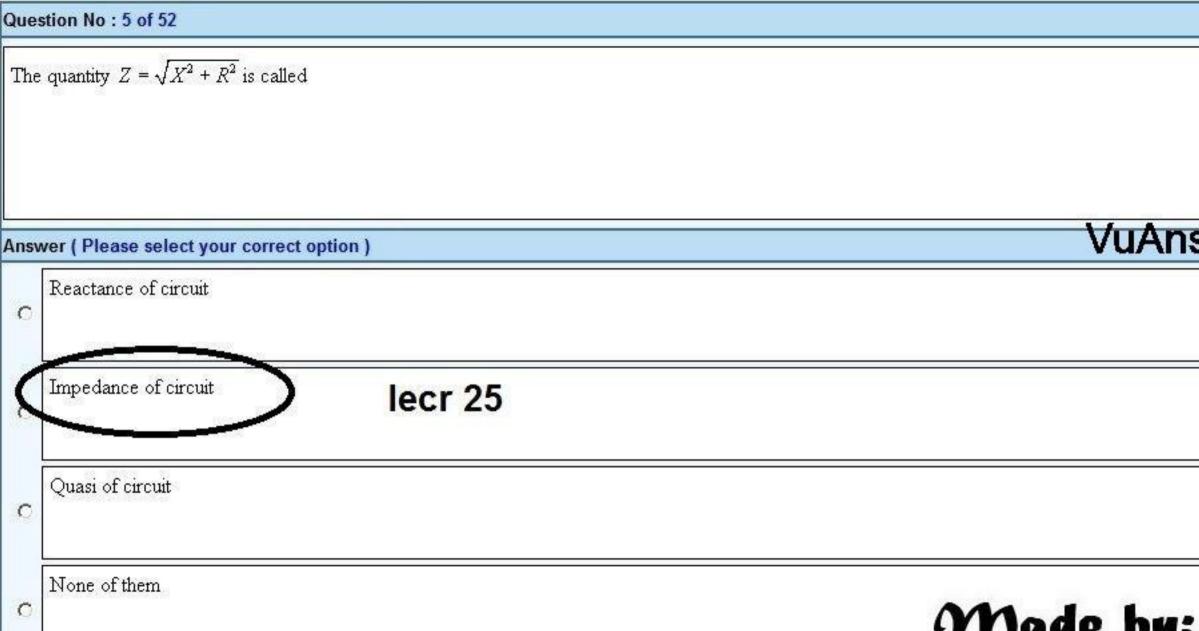


Question No: 4 of 52

If E(t)=0, $R \neq 0$ (E(t) is the source voltage & R is the resistance) then electric vibration of the circuit is said to be



Marks: 1 (Budgeted Time 1 Min)



Marks: 1 (Budgeted Time 1 Min)



Question No : 6 of 52

The time interval between two successive maxima of $x(t) = Ae^{-\lambda t} \sin[\sqrt{\omega^2 - \lambda^2} + \phi]$ is called

Answer (Please select your correct option)

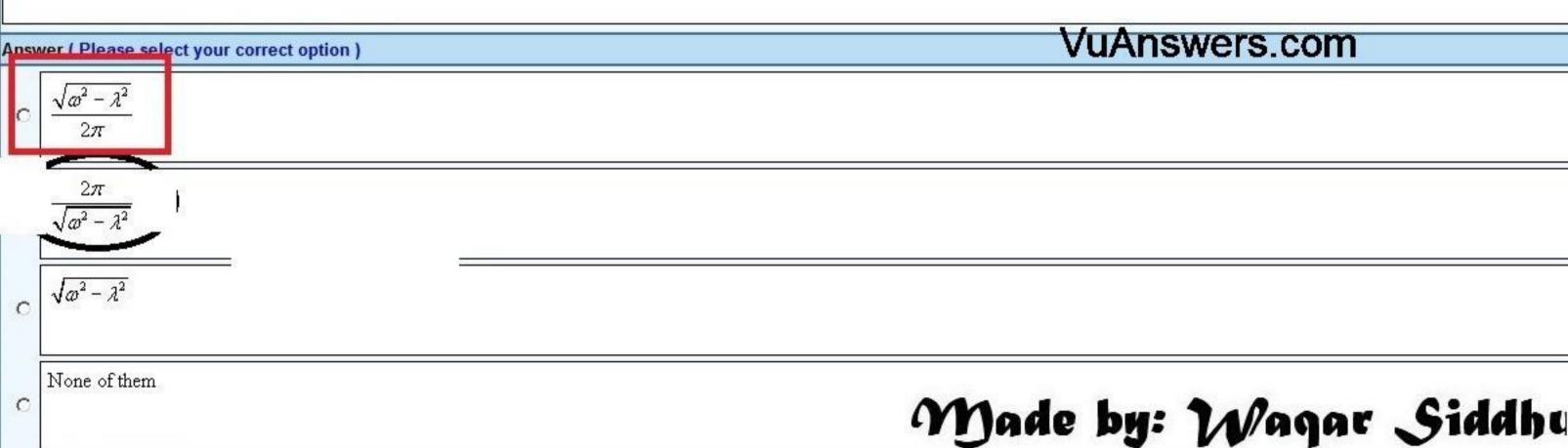
0	Phase period	Made by:
0	Quasi-period	
	Both the period	
С	None of them	

Marks: 1 (Budgeted Time 1 Min)



Question No : 7 of 52

The Quasi-frequency of the solution x(t) of free damped motion is given by the number



Marks: 1 (Budgeted Time 1 Min)

Question No : 8 of 52

For the equation of free damped motion
$$\frac{d^2x}{dt^2} + 2\lambda \frac{dx}{dt} + \omega^2 x = 0$$
 the roots are $m_1 = -\lambda + \sqrt{\lambda^2 - \omega^2}$ & $m_1 = -\lambda - \sqrt{\lambda^2 - \omega^2}$ If $\lambda^2 - \omega^2$ If $\lambda^2 - \omega^2$

Answer (Please select your correct option)	VuAns
C Over damped	
C Critically damped	
Under damped	
C None of them	Made bu:

Marks: 1 (Budgeted Time 1 Min)

< 0 then system is said to be



Question No : 9 of 52

The general solution of the equation $x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + (x^2 - \frac{1}{25}) = 0$ is Answer (Please select your correct option) C $y = c_1 J_1(x) + c_2 J_{-\frac{1}{3}}(x)$ $y = c_1 J_1(x) + c_2 J_{-\frac{1}{4}}(x)$ 0 $y = c_1 J_1(x) + c_2 J_{-\frac{1}{5}}(x)$ $y = c_1 J_{\frac{1}{25}}(x) + c_2 J_{\frac{1}{25}}(x)$

Marks: 1 (Budgeted Time 1 Min)



Que	uestion No : 10 of 52		
J	$\frac{2}{3}(x) - J_4(x) = \frac{1}{3}$		
Ans	wer (Please select your correct option)	VuAns	
С	$\begin{bmatrix} 2J'_{\frac{1}{3}}(x) \end{bmatrix}$		
o	$2J'_{\frac{2}{3}}(x)$		
С	$2J'_{\frac{4}{3}}(x)$		
С	None of them	Made by:	

Marks: 1 (Budgeted Time 1 Min)



Question No : 11 of 52

If
$$A = \begin{bmatrix} 1 & 2 & 3 \\ p & q & r & b \\ l & mn & o \end{bmatrix}$$
 then the order of *matirx* $A \times B$ is
Account (Blasso collect your entrect option) VUAns
2×4
2×3
C 2×3
None of them
None of them
None of them

Marks: 1 (Budgeted Time 1 Min)



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	ue	sti	on	N I	0:	12	OT	32
227	Concern.							

The order of a matrix which contains 1 rows and m columns is

Answer (Please select your correct option)

None of them	
c	
c 2×m	
C ^{1×m}	

Marks: 1 (Budgeted Time 1 Min)



Question No : 13 of 52				
Eigen value of the matirx $A = \begin{pmatrix} 3 & 4 \\ -1 & 7 \end{pmatrix}$ is	3-a(7-a)+4=0 21-3a-7a+a^2+4=0 a^2-10a+25=0			
Answer (Please select your correct option)	(a-5)^2=0	VuAns		
C $\lambda = 5,3$				
λ = 5, 5				
C $\lambda = 3, 4$				
C None of them		Made by:		

Marks: 1 (Budgeted Time 1 Min)



Question No : 14 of 52

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} \sin t$$
 is

Answer (Please select your correct option)

$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t; \quad \frac{dy}{dt} = x + y + 8\cos 2t$$

$$\frac{dx}{dt} = 3x - 7y + 4\sin t; \quad \frac{dy}{dt} = x + y + 8\cos t$$

$$\frac{dx}{dt} = 3x - 7y + 4\sin t; \quad \frac{dy}{dt} = x + y + 8\sin t$$

None of them

C

Marks: 1 (Budgeted Time 1 Min)



Question No : 15 of 52

0

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} e^{-t}$$
 is

Answer (Please select your correct option)

$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t; \quad \frac{dy}{dt} = x + y + 8\cos 2t$$

$$\frac{dx}{dt} = 3x - 7y + 4e^{-t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$

$$\frac{dx}{dt} = 3x - 7y + 4e^{t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$
None of them

Marks: 1 (Budgeted Time 1 Min)



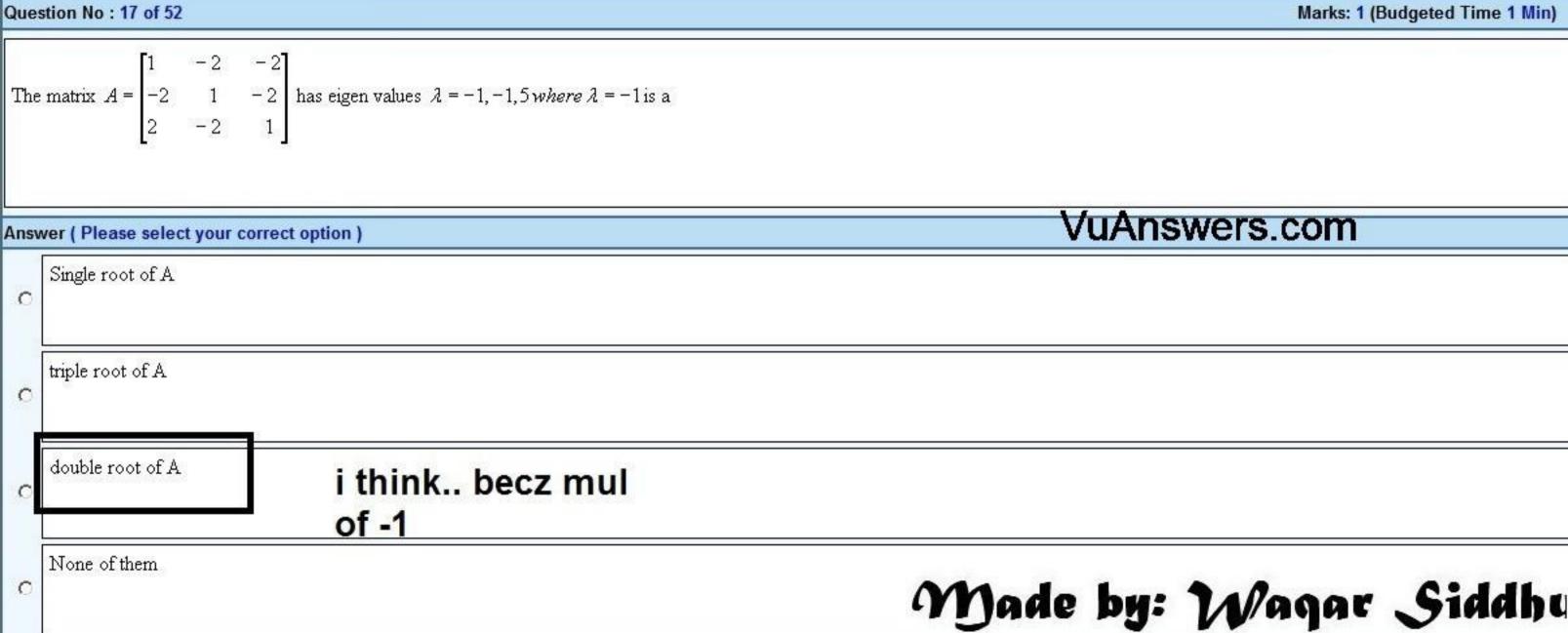
Question No : 16 of 52

The coefficient matrix of the following homogeneous system of differential equation $\frac{dx}{dt} = 3x + 2y$, $\frac{dy}{dt} = x + 2y$ is

nswer (Please select your correct option)	VuAns
$\begin{bmatrix} 3 & 2 \\ 2 & 2 \end{bmatrix}$	
$\begin{bmatrix} 3 & 1 \\ 2 & 2 \end{bmatrix}$	
$\begin{bmatrix} 3 & 2 \\ 1 & 2 \end{bmatrix}$	
C None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)





Question No : 18 of 52

By applying the Operator method or systematic elimination on a system of linear homo	ogeneous or linear non-homogeneous differential equations we
Answer (Please select your correct option) Single linear differential equation	VuAns
Double linear differential equation	
C Partial linear differential equation	
C None of them	Made by:

Marks: 1 (Budgeted Time 1 Min)

always get a



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u	u	es	0	or	Г	10		19	OT	52
12	1000									

If L denote the linear differential operators with constant coefficients, then $L_1L_4 - L_2L_3$ represents the

\ns\	wer (F	Please select y	your correct option)	VuAns
0	$\begin{bmatrix} L_1 \\ L_4 \end{bmatrix}$	$\left. \begin{array}{c} L_2 \\ L_3 \end{array} \right $		
0	$\begin{vmatrix} L_1 \\ L_4 \end{vmatrix}$	$\left. \begin{array}{c} L_3 \\ L_2 \end{array} \right $		
c	$\begin{bmatrix} L_1 \\ L_3 \end{bmatrix}$	$\begin{bmatrix} L_2 \\ L_4 \end{bmatrix}$		
0	None	e of them		Modo hu:

Marks: 1 (Budgeted Time 1 Min)



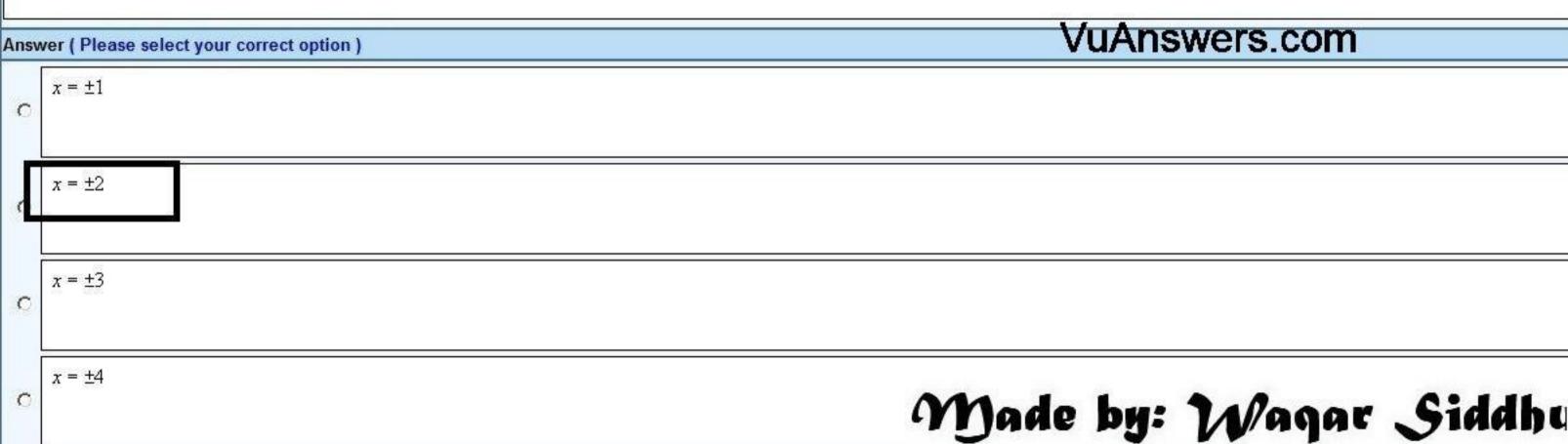
Question No : 20 of 52	
The matrix $\begin{bmatrix} 2 & 6 \\ 1 & 3 \end{bmatrix}$ is	
Apawer (Diegos colocityour correct option)	VuAns
C Singular matrix	
Non singular matrix	
C Diagonal matrix	
C Scalar Matrix	Made by:

Marks: 1 (Budgeted Time 1 Min)



Question No : 21 of 52

The Differential Equation $(x^2 - 4)y'' - 10xy' + y = 0$ has singularity at



Marks: 1 (Budgeted Time 1 Min)

Question No : 22 of 52

Operator method is the method of the solution of a system of linear homogeneous or linear non-homogeneous differential equations which is based on the process of systematic elimination of the

	Systematic Elimination: Operator Method
Answer (Please select your correct option)	This method of solution of a system of linear homogeneous or linear non- homogeneous differential equations is based on the process of systematic elimination of the dependent variables.
Dependent variables	This elimination provides us a single differential equation in one of the dependent variables that has not been eliminated.
	This equation would be a linear homogeneous or a linear non-homogeneous differential equation and can be solved by employing one of the methods discussed earlier to obtain one of the dependent variables.
C Independent variable	<i>Notice that</i> the analogue of multiplying an algebraic equation by a constant is operating on a differential equation with some combination of derivatives.
C Choice variable	
C None of them	Made bi

Marks: 1 (Budgeted Time 1 Min)



Question No : 23 of 52

The non-zero solution of the system exists only when

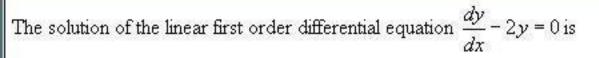
non-zero vs non trivial

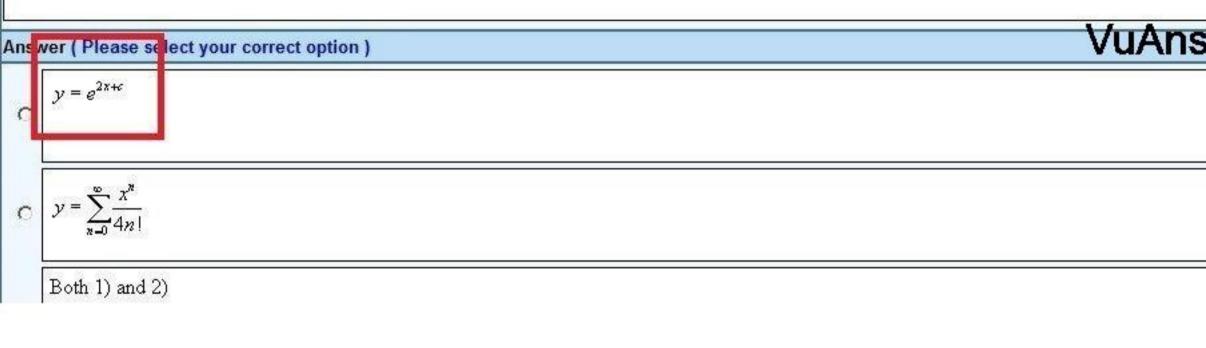
C det(.	$A - \lambda I) = 1$	
1	11 /22 / 1	The non-trivial solution of the system exists only when
C det(.	$A - \lambda I) = 0$	$det(A - \lambda I) = 0$ This equation is called the characteristic equation of the matrix A. Thus the Eigenvalues
c det(.	$A - \lambda I) = -1$	of the matrix A are given by the roots of the characteristic equation. To find an eigenvector corresponding to an eigenvalue λ we simply solve the system of linear algebraic equations $\det (A - \lambda I)K = 0$

Marks: 1 (Budgeted Time 1 Min)



Question No : 24 of 52



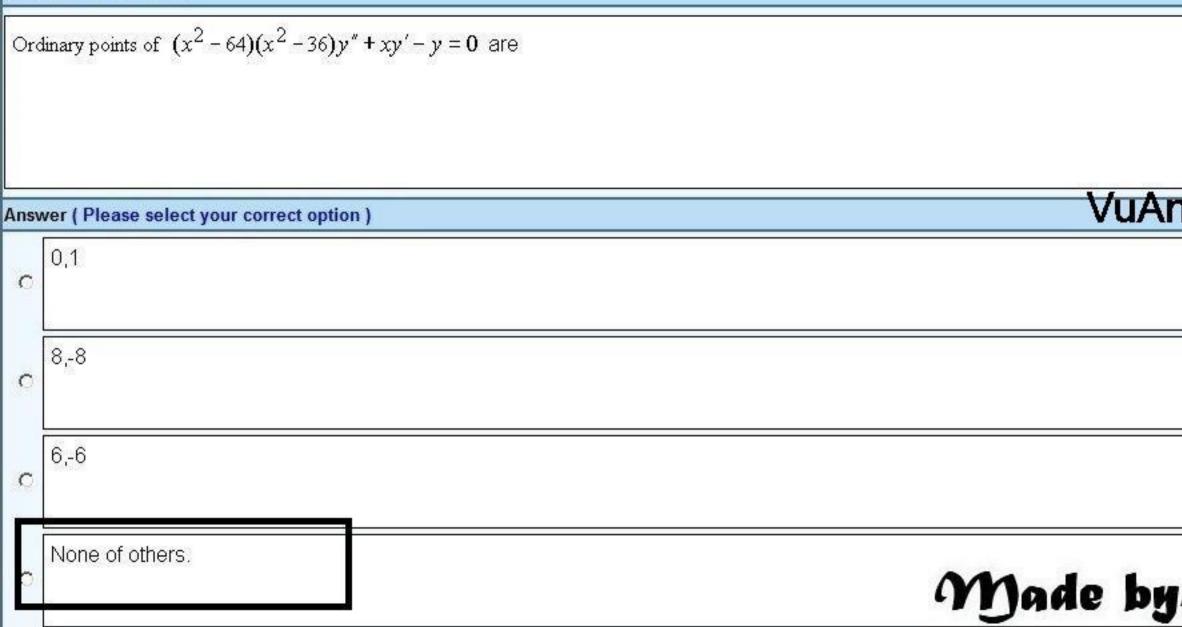


None of them

Marks: 1 (Budgeted Time 1 Min)



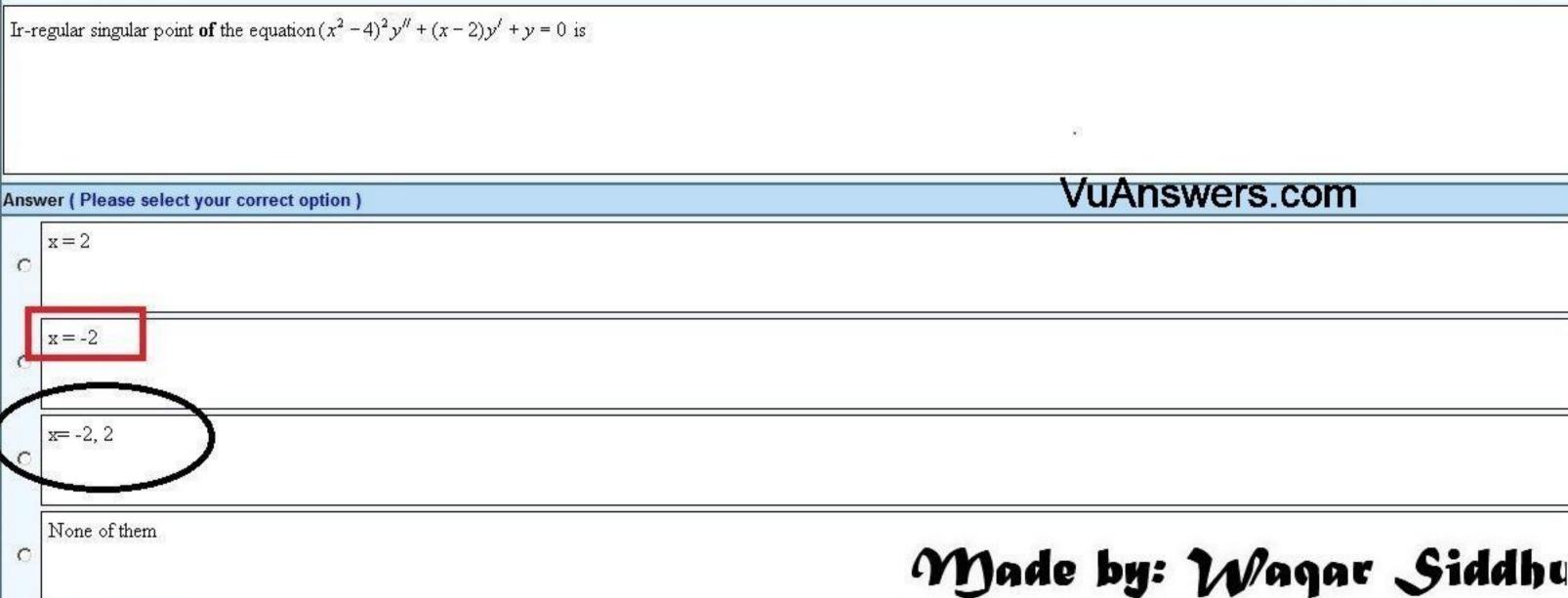
Question No : 25 of 52



Marks: 1 (Budgeted Time 1 Min)



Question No : 26 of 52



Marks: 1 (Budgeted Time 1 Min)

Question No : 27 of 52	

The matrix
$$A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$
 has

Answer (Please select your correct option)

VuAns

Answer (Please select your correct option)

Real and unequal value

Repeated & real eigen value

Complex eigen value

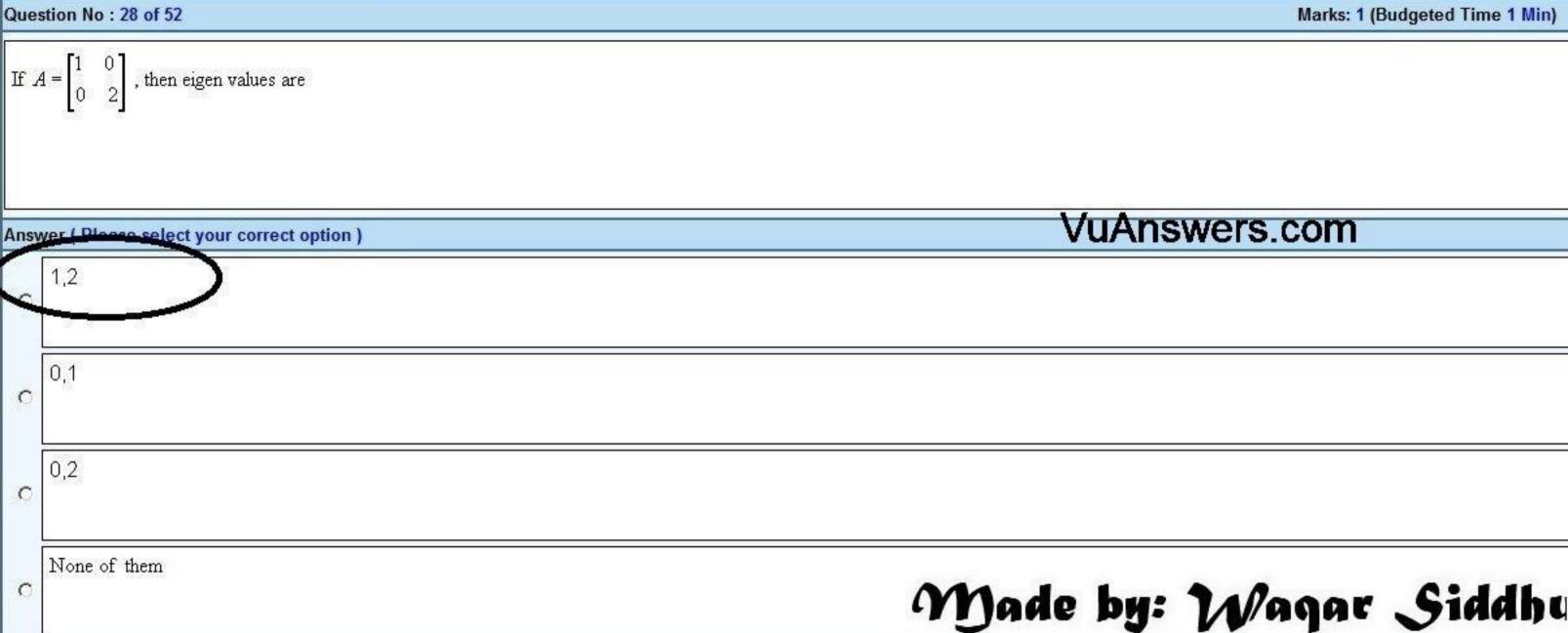
Complex eigen value

None of them.

Omade by:

Marks: 1 (Budgeted Time 1 Min)

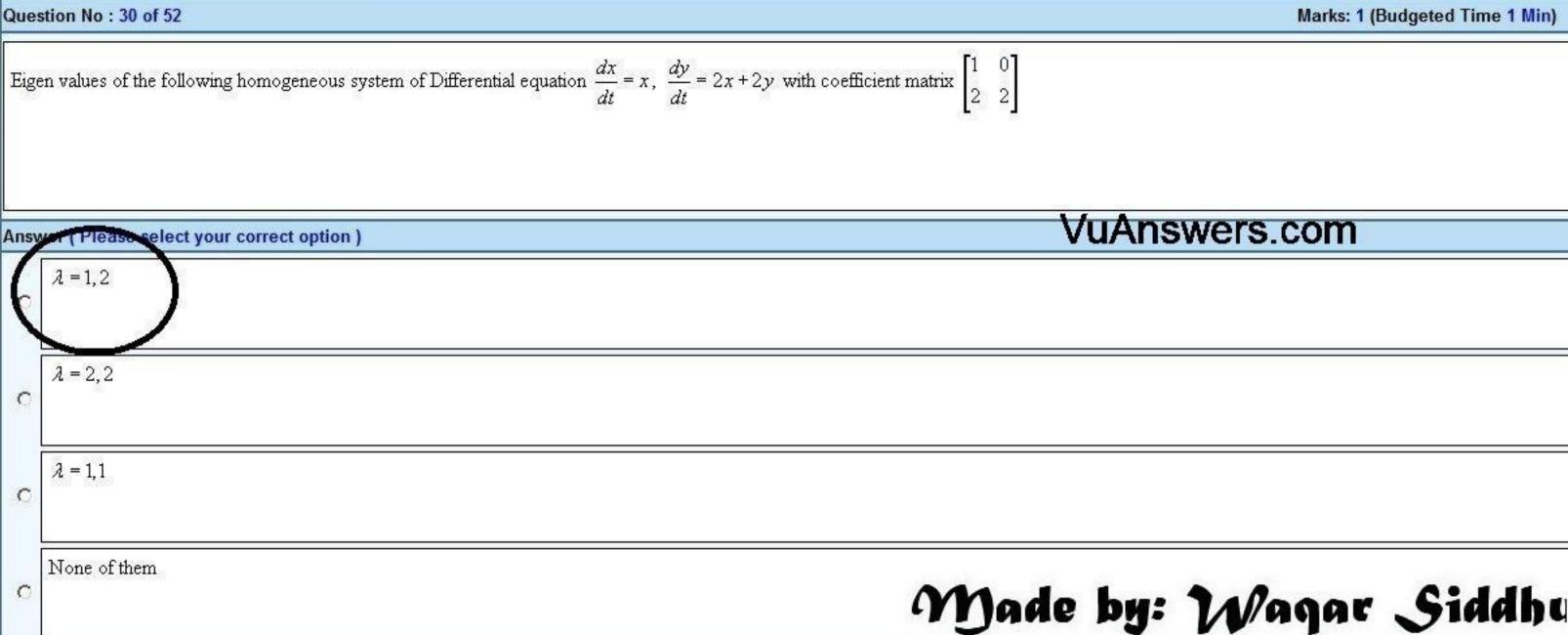




Question No : 29 of 52		
Let ^A be a	an eigen value of a non zero square matrix A. Then the equation de	$t(A - \lambda I) = 0$ is called
Answer (Pl	lease select your correct option)	VuAns
C	al equation	
Chara	acteristics equation	
C Non-t	trivial equation	
C None	e of them	Made by:

swers.com





Question No : 31 of 52

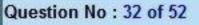
Which of the following may not be considered as integration technique

Answer (Please select your correct option)

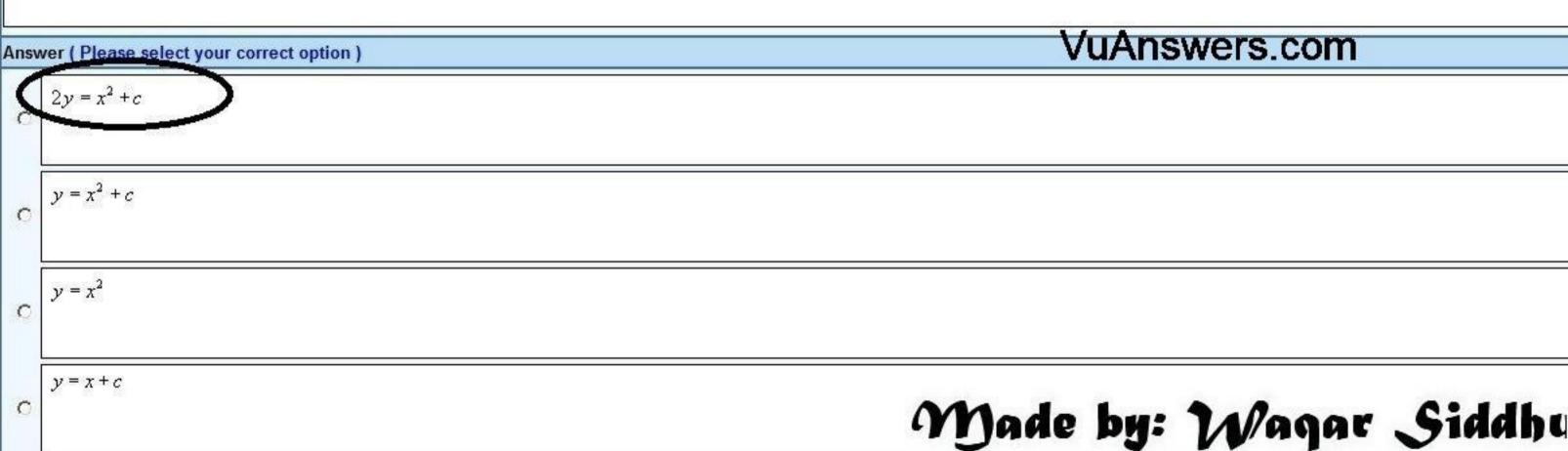
0	None of these	Made by:
	By Partial Fractions	
0	By substitutions	
c	By Parts	

Marks: 1 (Budgeted Time 1 Min)



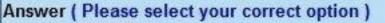


Which of the following equations satisfy the differential equation $\frac{dy}{dx} = x$



Question No : 33 of 52

The differential equation $(3x^2y+2) dx + (x^3+y) dy = 0$ is -----



Exact	
C Non-exact	
C Separable	
C Homogenous	Made by:

Marks: 1 (Budgeted Time 1 Min)

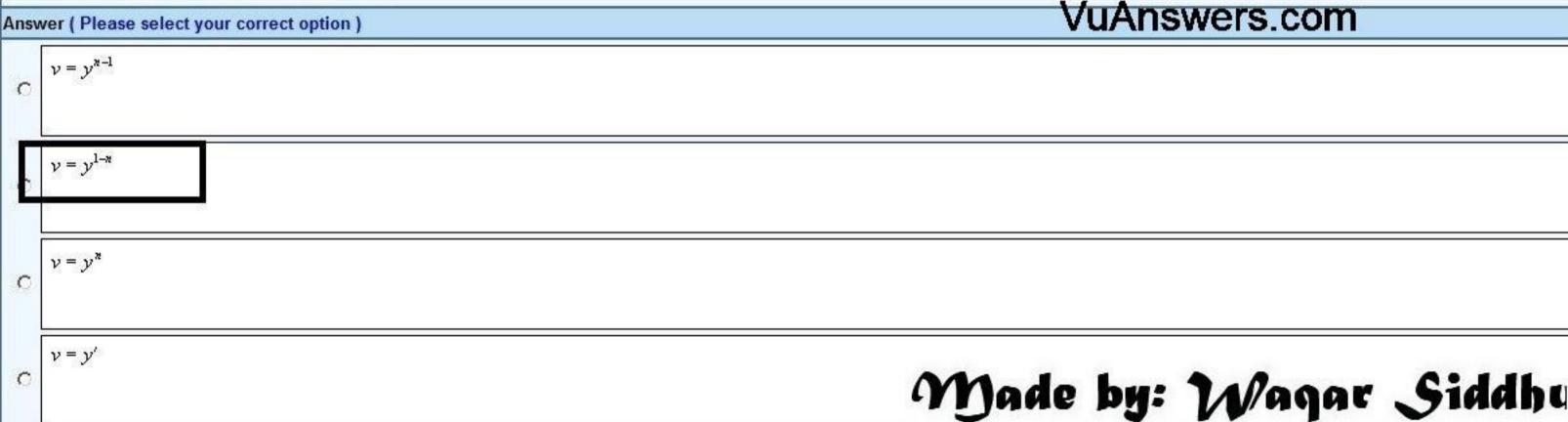


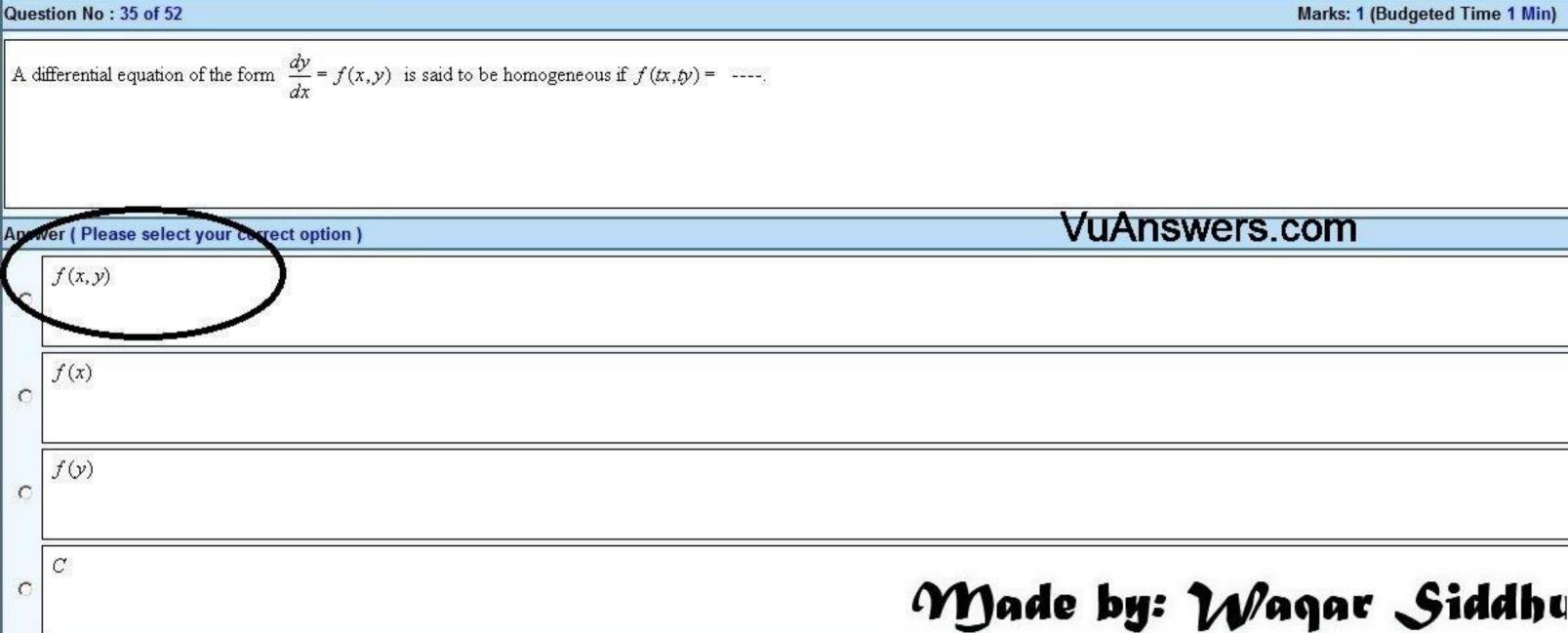
Question No : 34 of 52

In order to change the Bernoulli Equation

 $\frac{dy}{dx} + p(x)y = q(x)y^n$

into linear differential equation, we choose ----.





Question No : 36 of 52

The differential equation ------ is separable.

Answer (Please select your correct option)

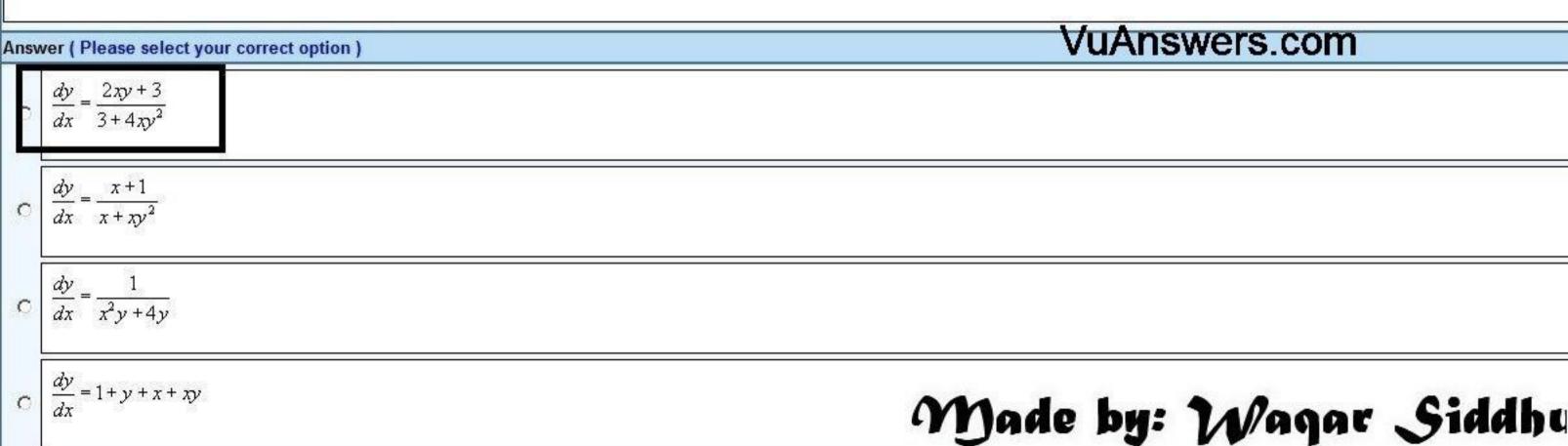
с	$x(x+y)\frac{dy}{dx} = 4$	
c	$\frac{dy}{dx} = \frac{x^2}{x + xy}$	
с	$\frac{dy}{dx} = \frac{y}{1+xy^3}$	
С	$\boxed{\frac{dy}{dx} = \frac{xy+3}{1+2xy}}$	Made by:

Marks: 1 (Budgeted Time 1 Min)

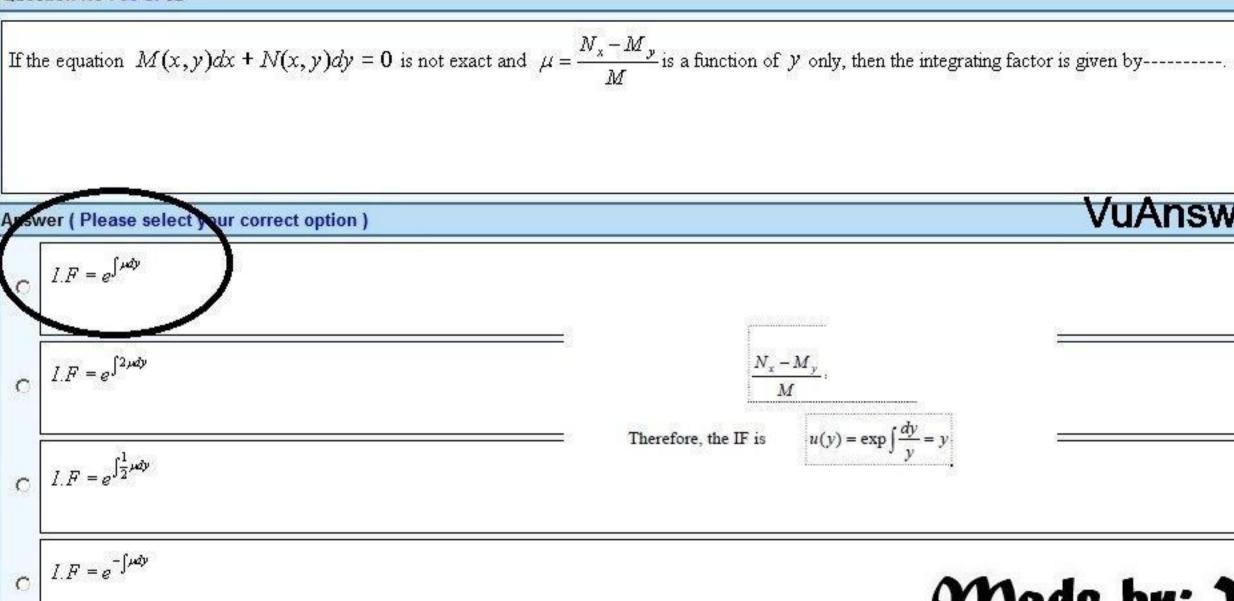


Question No : 37 of 52

The differential equation ------ is not separable.

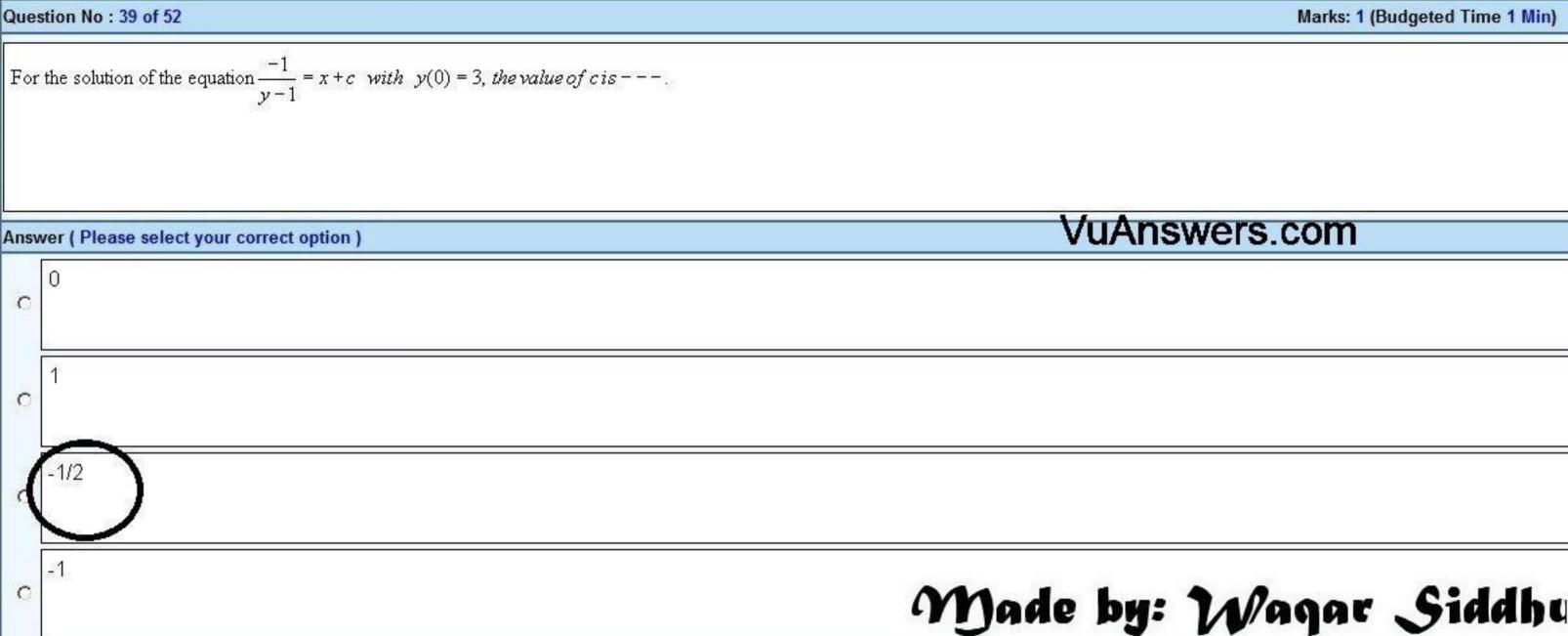


Question No : 38 of 52



Marks: 1 (Budgeted Time 1 Min)





Question No : 40 of 52

C

C

C

If
$$e^{2x}(c_1\cos 3x + c_2\sin 3x)$$
 is the solution of $\frac{d^2y}{dx^2} - 4\frac{dy}{dx} + 13y = 0$, then which of the following is the most accurate option for $\frac{d^2y}{dx^2} - 4\frac{dy}{dx}$

Answer (Please select your correct option)

Its general form of the particular solution will be $Ae^{2x} + B\sin x + C\cos x$.

Its general form of the particular solution will be $e^{2x} (A \sin x + B \cos x)$.

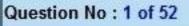
Its general form of the particular solution will be $e^{2x} (Ax \sin x + Bx \cos x)$.

Its general form of the particular solution will be $e^{2x} (Ax \sin 3x + Bx \cos 3x)$.



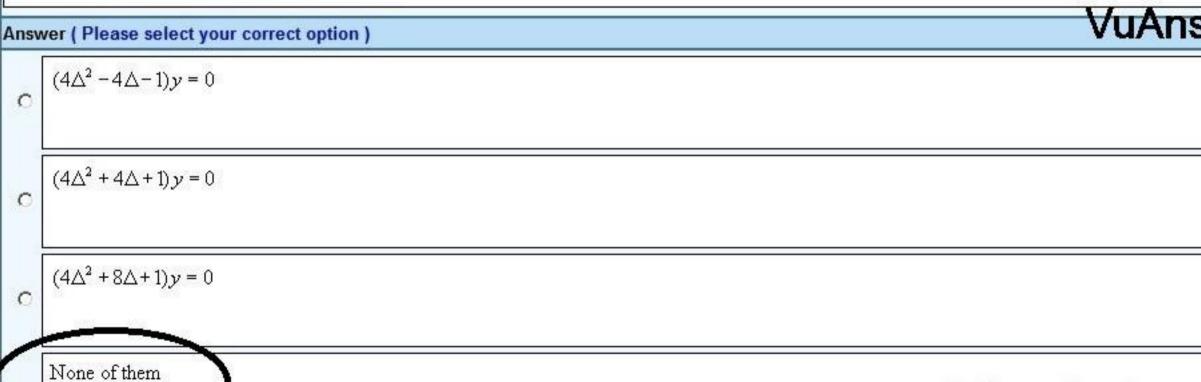
Marks: 1 (Budgeted Time 1 Min)

 $+13y = e^{2x}\sin 3x?$



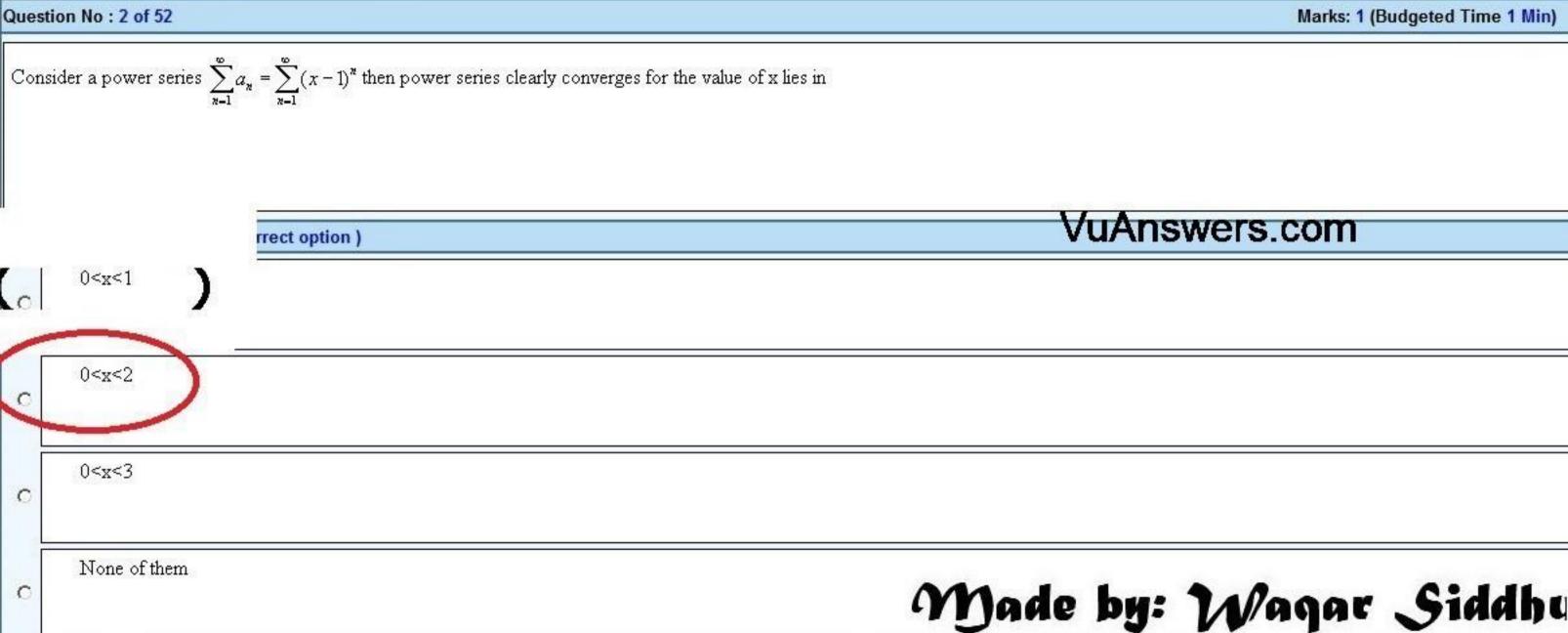
C

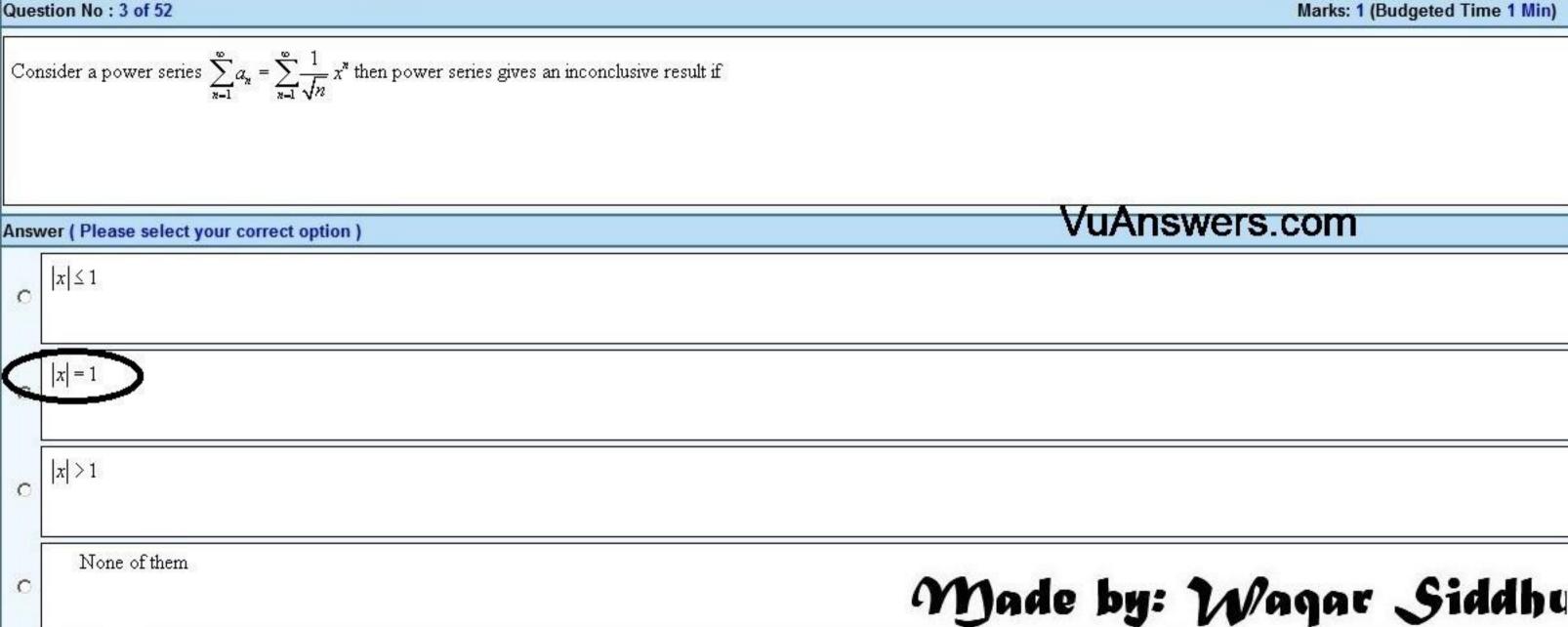
The conversion of Cauchy Euler equation
$$4x^2 \frac{d^2y}{dx^2} + 8x \frac{dy}{dx} + y = 0$$
 after putting $x = e^t$ becomes

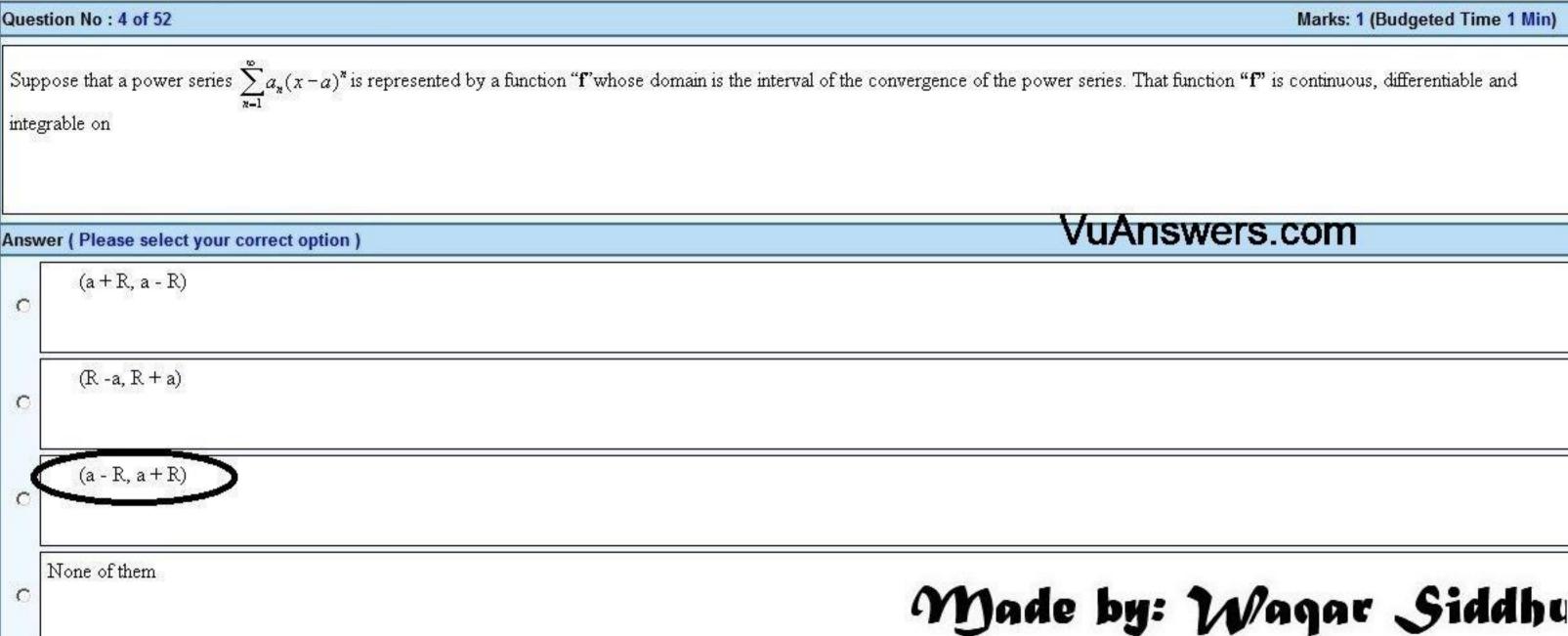


Marks: 1 (Budgeted Time 1 Min)









Question No : 5 of 52 Solution of the D.Equation 4y'' + y = 0 is VuAnswers.com Answer (Please select your occept option) $y(x) = c_1 \cos \frac{x}{2} + c_2 \sin \frac{x}{2}$ 0 $y(x) = c_1 \cos \frac{x}{2}$ C $y(x) = c_1 \sin \frac{x}{2}$ C None of them

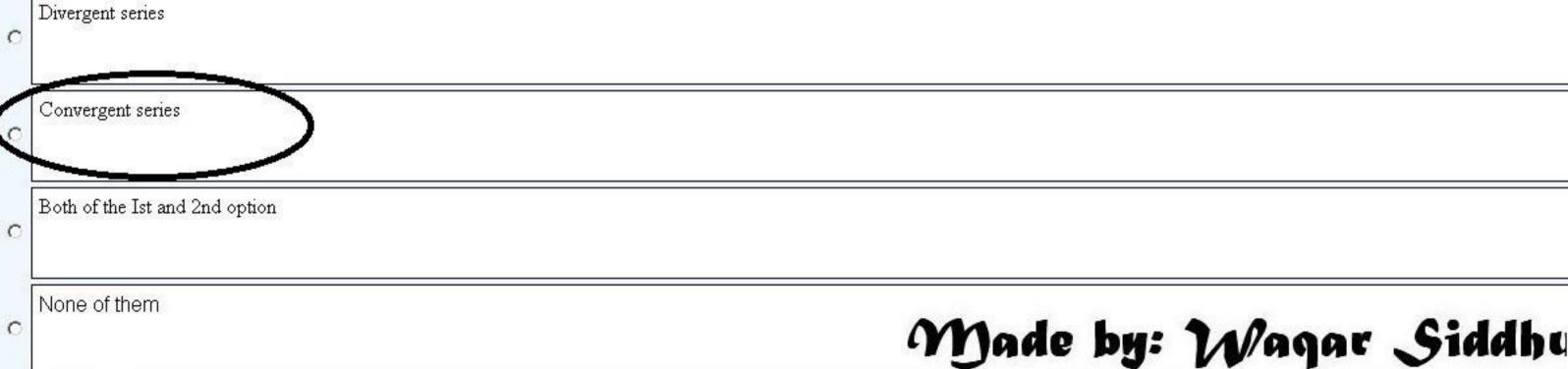
0



Question No : 6 of 52

A function f is said to be convergent at a point a if it can be represented by the power series in (x-a) which has





Marks: 1 (Budgeted Time 1 Min)

Question No : 7 of 52 If $E(t)=0$, $R \neq 0$ ($E(t)$ is the source voltage & R is the resistance) then electric vibration of the circuit is said to be		
		Ansv
c	Free un-damped oscillation	
0	Both damped and un-damped oscillation	
С	None of them	Made bu:

iswers.com



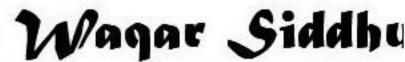
Question No : 8 of 52

If E(t)=0, R = 0 (E(t) is the source voltage & R is the resistance) then electric vibration of the circuit is said to be

Answer (Please select your correct option)	VuAns
C Free damped oscillation	
Free un-damped oscillation	
Both damped and un-damped oscillation	
C None of them	Made by:

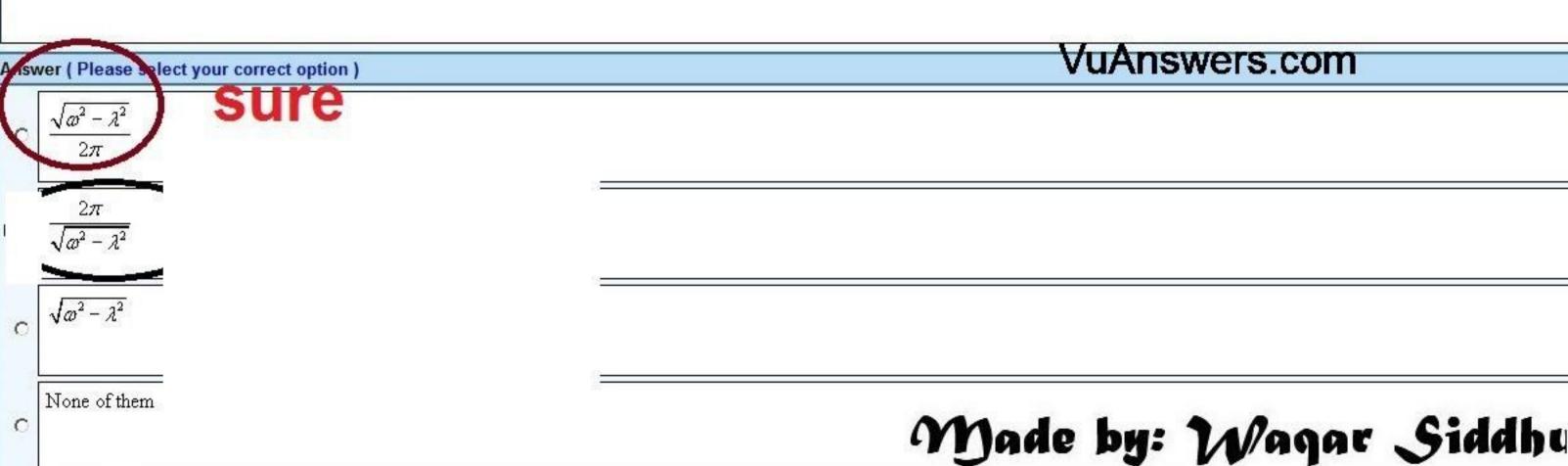
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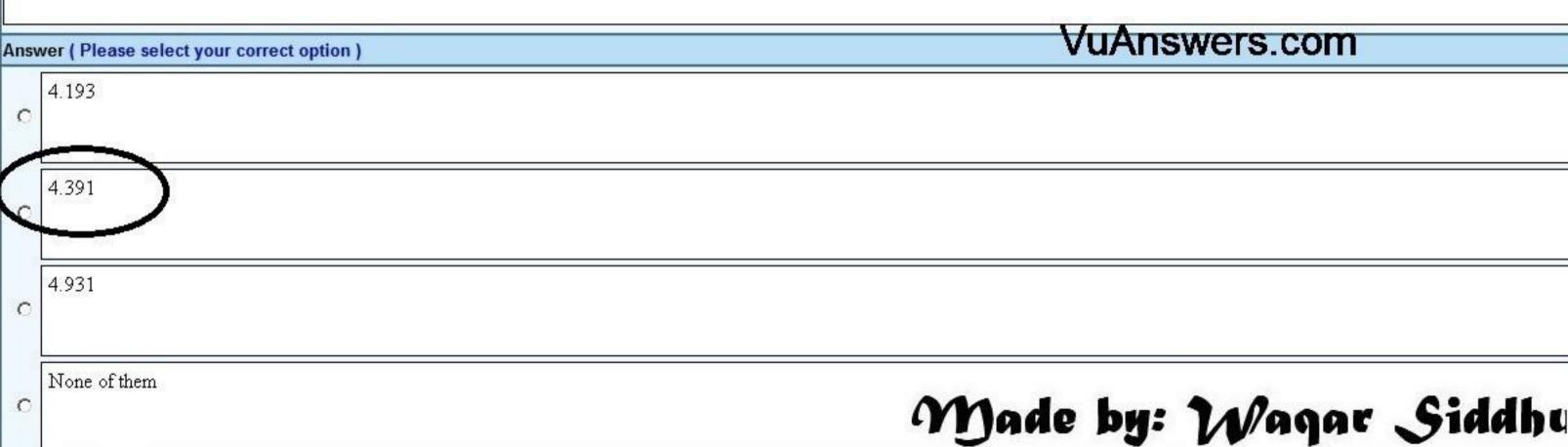
Question No : 9 of 52

The Quasi-frequency of the solution x(t) of free damped motion is given by the number



Question No : 10 of 52

Since
$$x(t) = \frac{2\sqrt{10}}{3}e^{-t}\sin[3t + 4.391]$$
 is the solution of $\frac{d^2x}{dt^2} + 2\frac{dx}{dt} + 10x = 0$ with $x(0) = -2$, $x'(0) = 0$. So the phase angle is



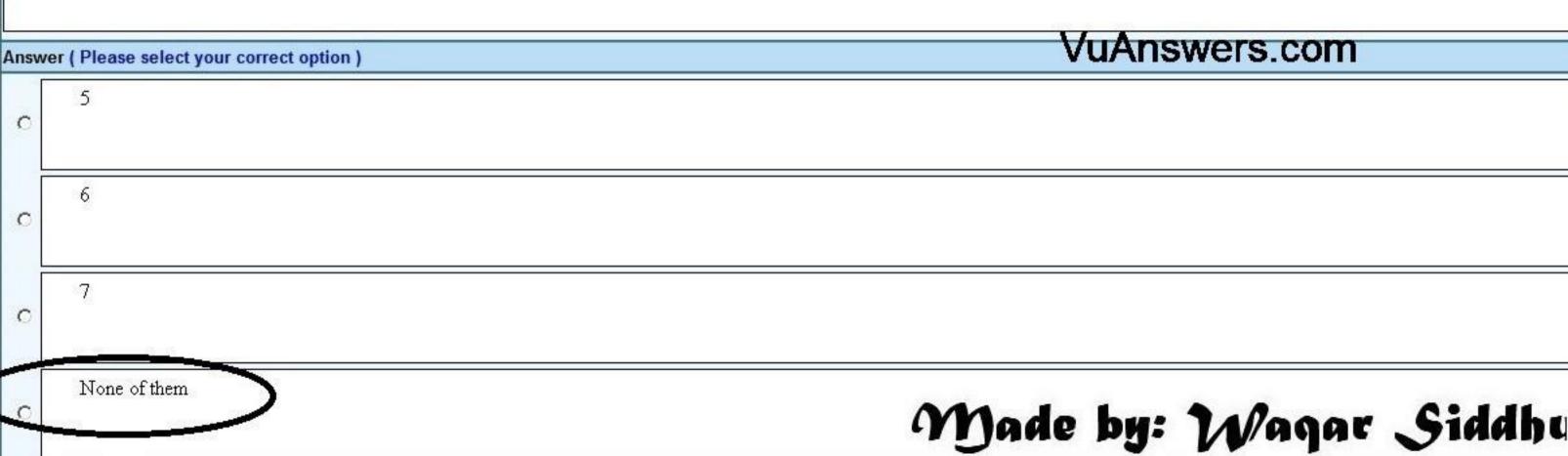
Question No : 11 of 52		
The sta	andard unit for measurement of inductance is	
Answer	(Please select your correct option)	VuAn
o V	olt	
с ^{ОІ}	hms	
H	enry	
C N	one of them	Made by:

iswers.com



Question No : 12 of 52

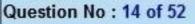
The second order linear differential equation
$$x^2 \frac{d^2 y}{dx^2} + x \frac{dy}{dx} + (x^2 - 49) = 0$$
 is a Bessel equation of degree

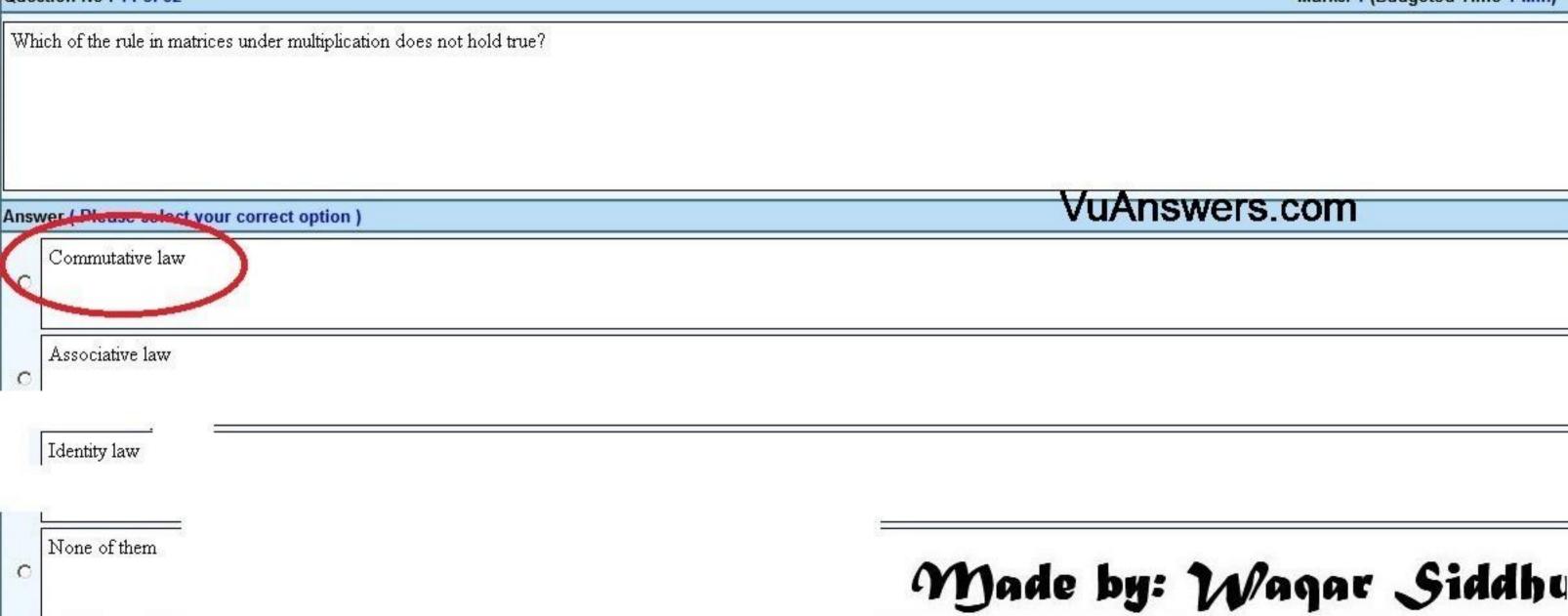


$\Rightarrow 2J'_n(x) = J_{n-1}(x) - J_{n+1}(x)$	
put n=1/3	
on)	VuAns
	Made by:
	put n=1/3

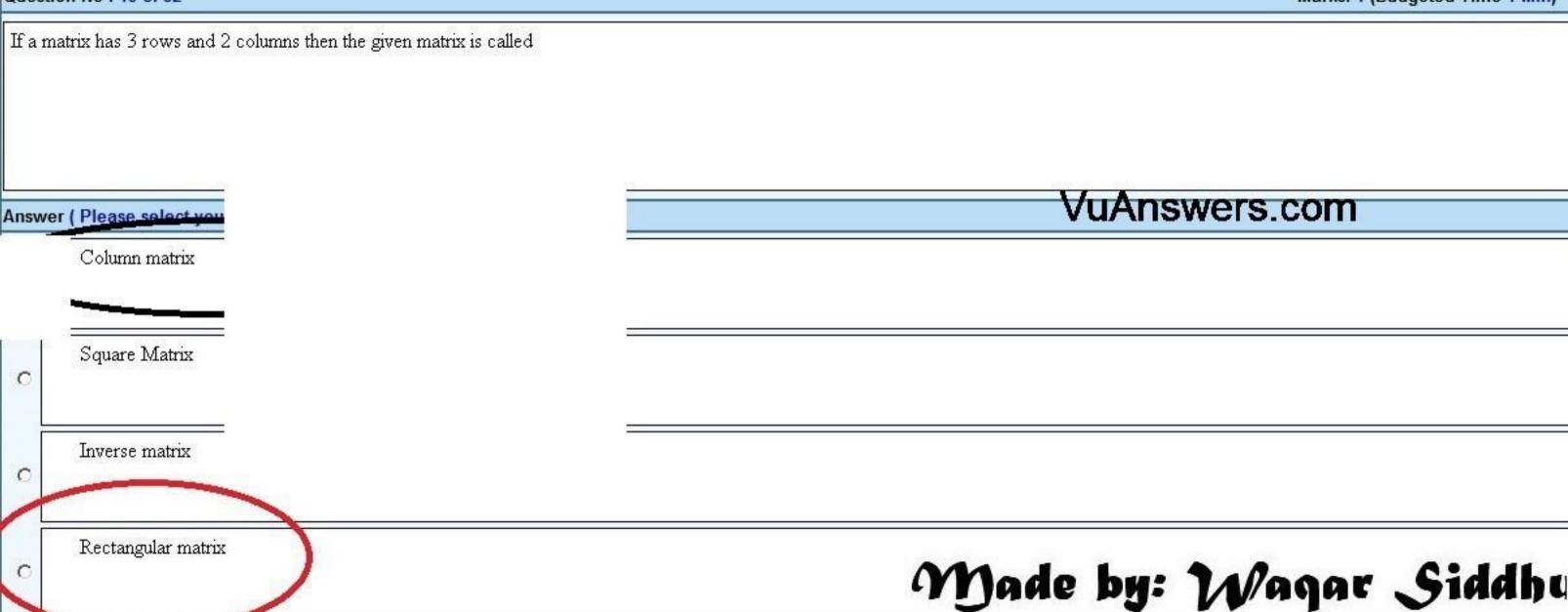
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Question No : 15 of 52





Question No : 17 of 52

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} \sin t$$
 is

Answer (Please select your correct option)

$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t; \quad \frac{dy}{dt} = x + y + 8\cos 2t$$

$$\frac{dx}{dt} = 3x - 7y + 4\sin t; \quad \frac{dy}{dt} = x + y + 8\cos t$$

$$\frac{dx}{dt} = 3x - 7y + 4\sin t; \quad \frac{dy}{dt} = x + y + 8\sin t$$
None of them
None of them
Mone of them

Marks: 1 (Budgeted Time 1 Min)



Question No : 18 of 52

The given system without the use of matrices
$$\frac{d}{dt} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 3 & -7 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} + \begin{pmatrix} 4 \\ 8 \end{pmatrix} e^{-t}$$
 is

Answer (Please select your correct option)

C
$$\frac{dx}{dt} = 3x - 7y + 4\sin 2t$$
; $\frac{dy}{dt} = x + y + 8\cos 2t$
C $\frac{dx}{dt} = 3x - 7y + 4e^{-t}$; $\frac{dy}{dt} = x + y + 8e^{-t}$

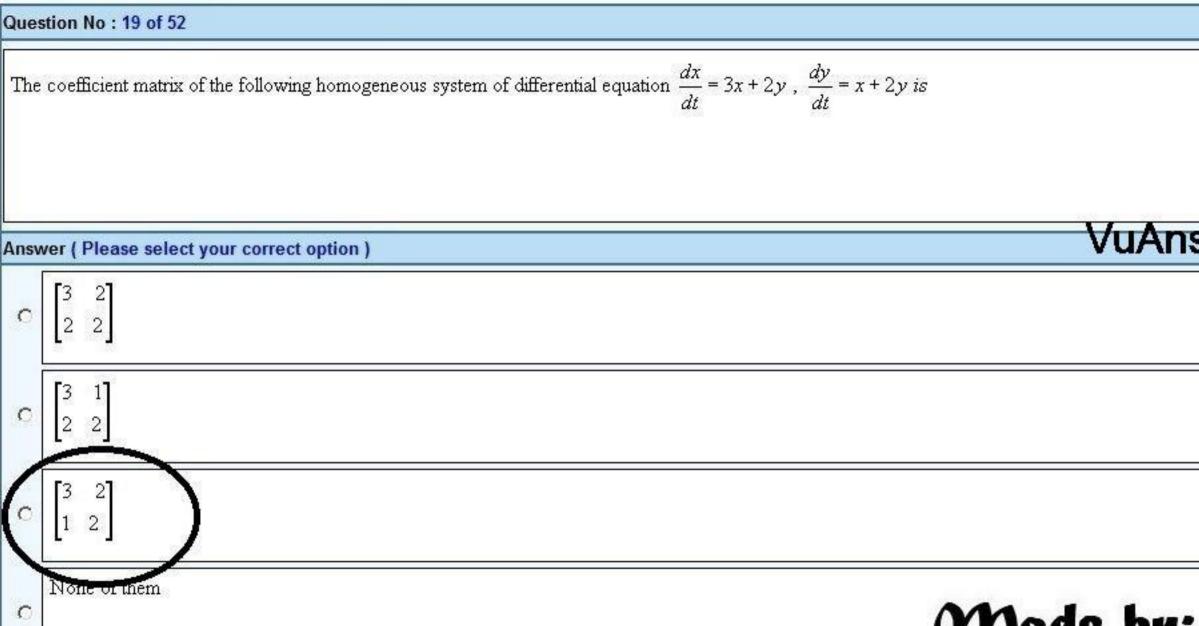
$$\frac{dx}{dt} = 3x - 7y + 4e^{t}; \quad \frac{dy}{dt} = x + y + 8e^{-t}$$

None of them

0

Marks: 1 (Budgeted Time 1 Min)









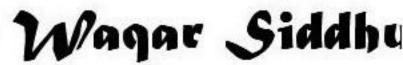
Question No : 21 of 52

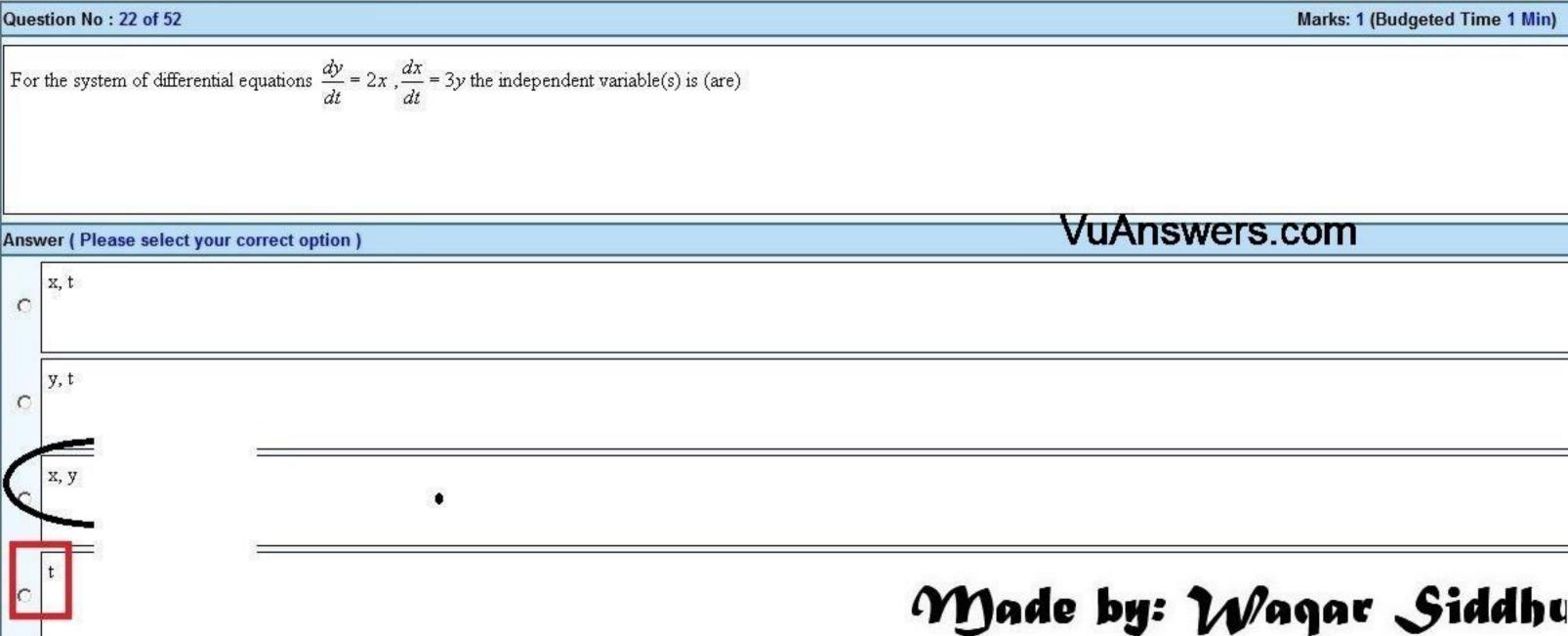
By applying the Operator method or systematic elir	nination on a system of linear homogeneous or linear non-homogeneous differential equations we a
Answer (Please select your correct option)	VuAns
Single linear differential equation	
C Double linear differential equation	
Partial linear differential equation	
C None of them	Made by:

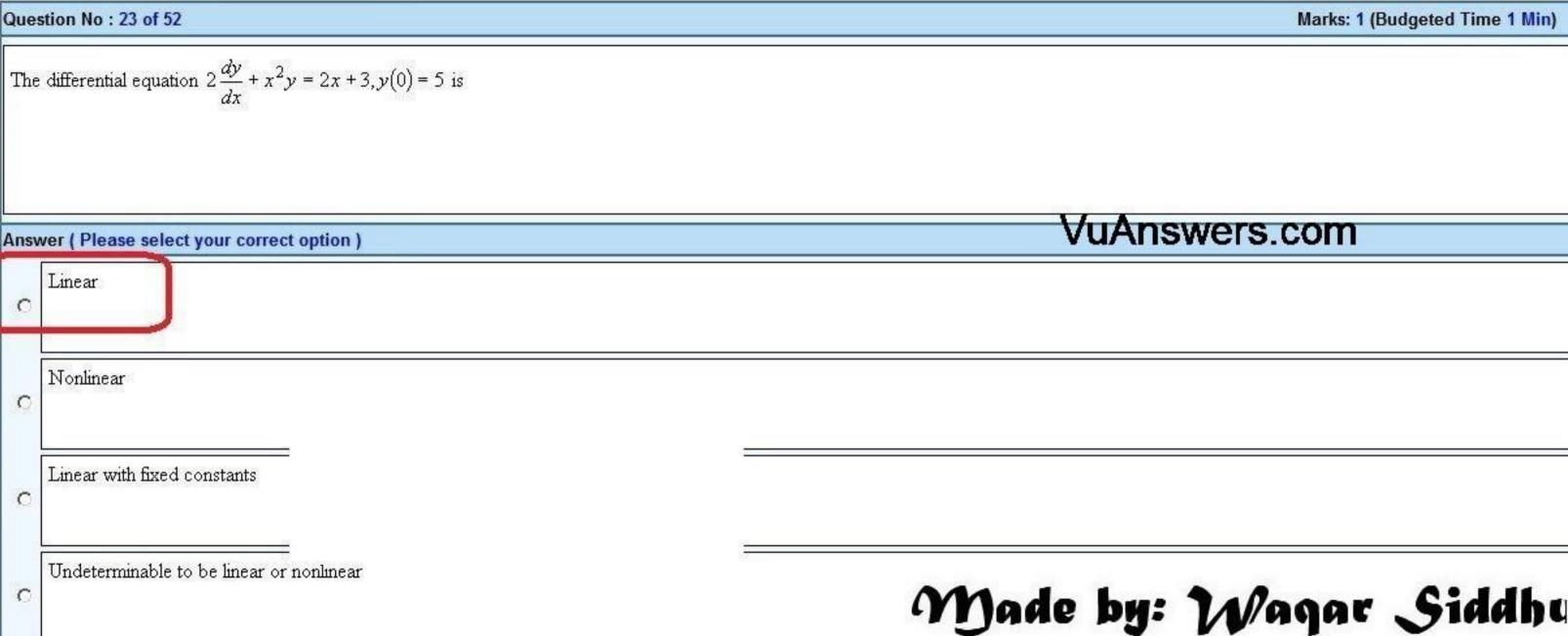
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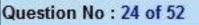
always get a

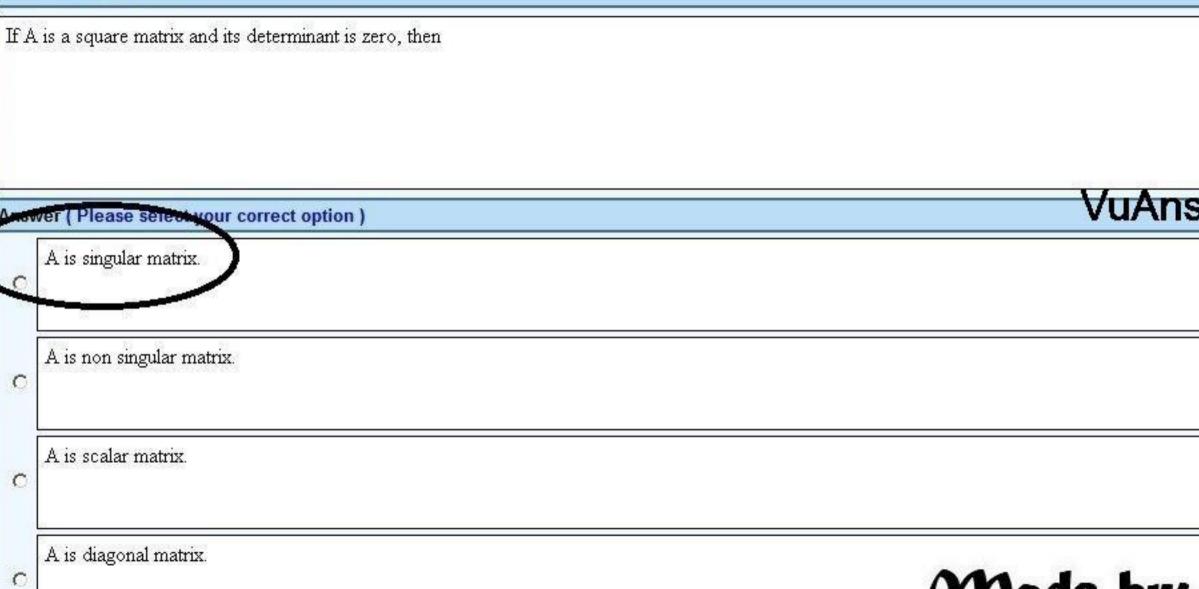
swers.com













uestion No : 25 of 52		
The	e Period of oscillator in the solution X=50Sin (20t+8.5) is	
nsv	wer (Please select your correct option)	VuAn
0	0.17643	
c	0.32045	
0	0.31400	
С	0.58000	Mada hu



Question No : 26 of 52

An electronic component of an electronic circuit that has the ability to store charge and opposes any change of voltage in the circuit is called

Answer (Please select your correct option)

Capacitor None of them	le bu:
C Resistor	
C Inductor	

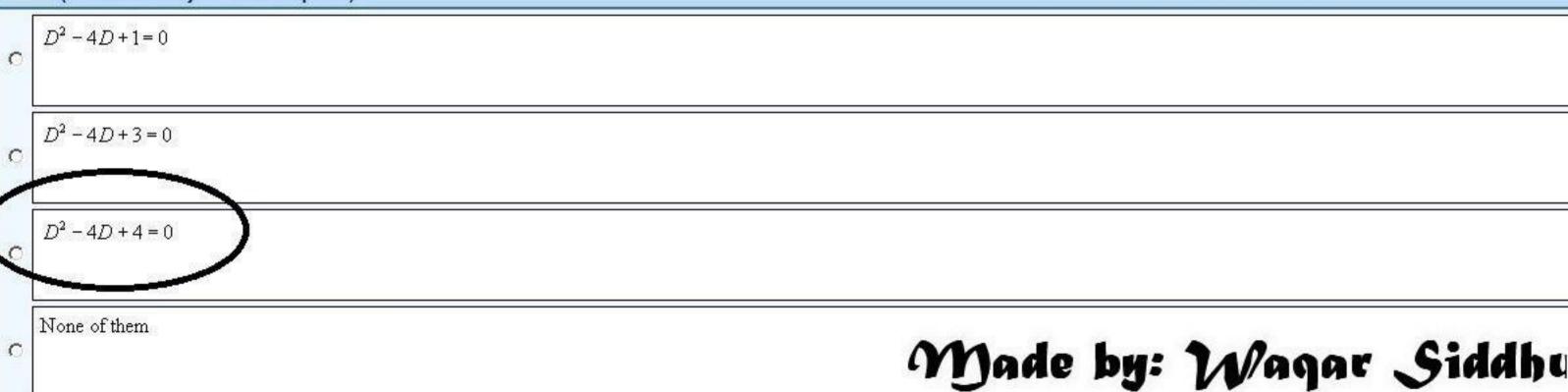
Marks: 1 (Budgeted Time 1 Min)



Question No : 27 of 52

If determinant
$$\begin{vmatrix} D-3 & 1 \\ -1 & D-1 \end{vmatrix} = 0$$
, then

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

Question No : 28 of 52

A rectangular arrangement of numbers or functions enclosed in the square brackets is called

Answer (Please select your correct option)

None of them	
Matrix	
C derterminant	
CEquation	

Marks: 1 (Budgeted Time 1 Min)



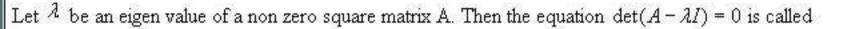
uestion No : 29 of 52	
If wroskian of the solution vectors ${}^{X_1 \& X_2}$ is zero, then vectors are	
nswer (Please select your correct option)	VuAn
C Linearly Independent	
Linearly dependent	
C None of them	
Parallel	

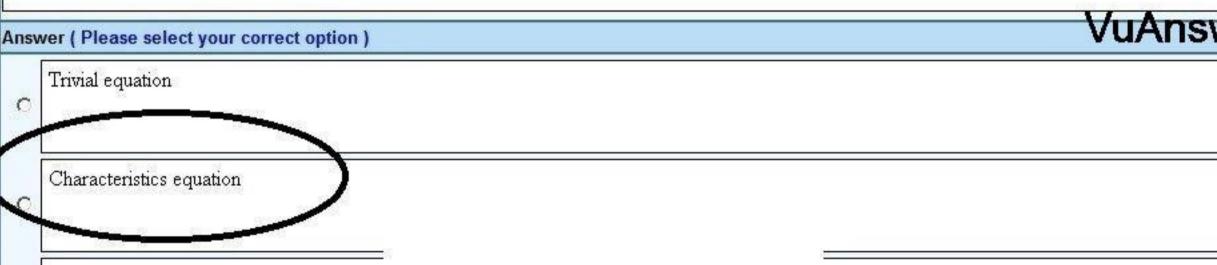


Question No : 30 of 52	
If $A = \begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$, then eigen values are	1-a(2-a)=2-a-2a+a^2
	a^2-3a+2=0
nswer (Please select your correct option	vuAns
1,2	a~2-2a-a+2-0
	a(a-2)-1(a-2)=0
с ^{0,1}	a=1,2
c 0,2	
C None of them	Made by:



Question No : 31 of 52





Non-trivial equation

None of them

C

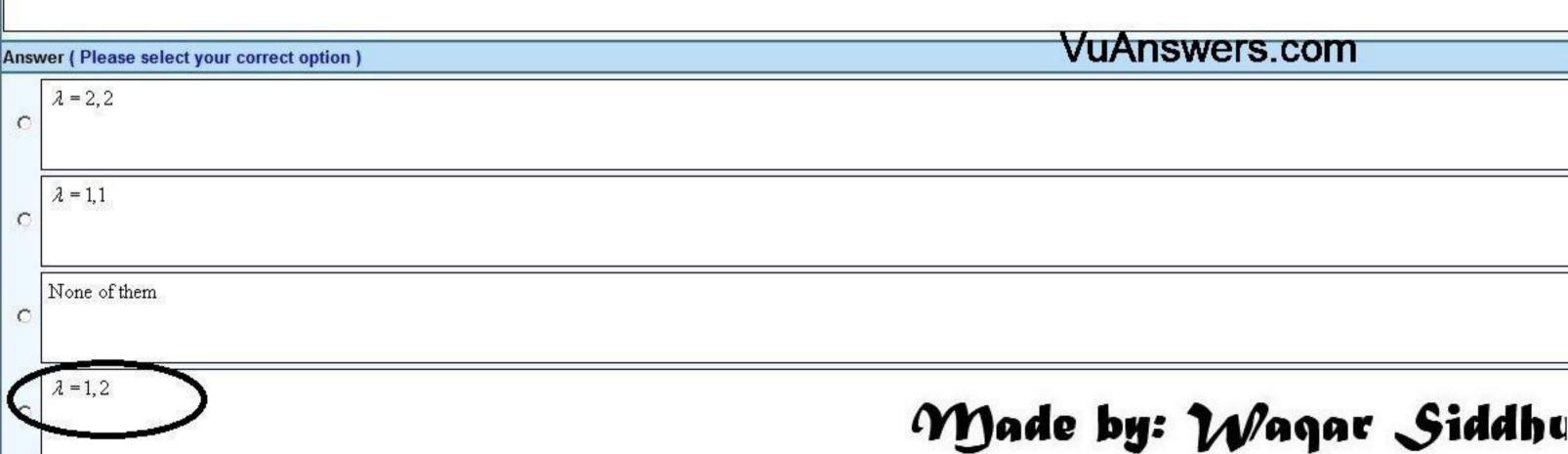
C

Marks: 1 (Budgeted Time 1 Min)



Question No : 32 of 52

Eigen values of the following homogeneous system of Differential equation
$$\frac{dx}{dt} = x$$
, $\frac{dy}{dt} = 2x + 2y$ with coefficient matrix $\begin{bmatrix} 1 & 0 \\ 2 & 2 \end{bmatrix}$



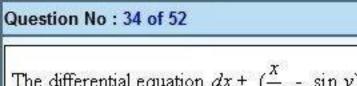
Marks: 1 (Budgeted Time 1 Min)

Question No : 33 of 52 The equation $\frac{dy}{dx} = \frac{x(x+1)}{y(y-1)}$ is a/an ------1 13 Answer (Please select your correct option) partial differential equation. 0 ordinary differential equation. C polynomial equation. C transcendental equation.

C

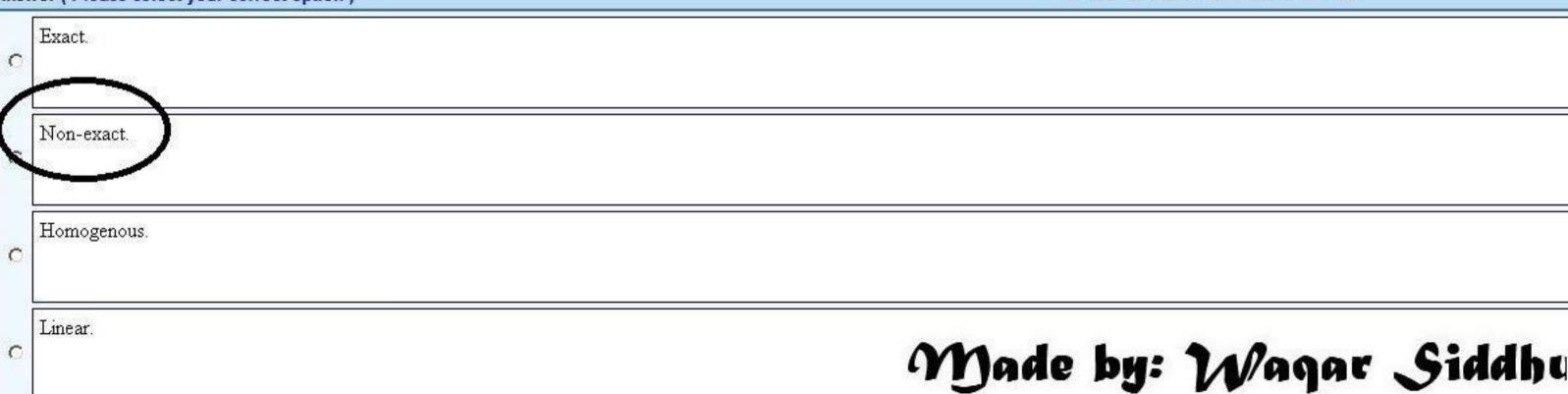
Marks: 1 (Budgeted Time 1 Min)





The differential equation
$$dx + (\frac{x}{y} - \sin y) dy = 0$$
 is -----

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

Question No : 35 of 52

If f(x) and g(x) are linearly dependent on I, then----.

Answer	(Please select	your correct option)
--------	-----------------	-----------------------

 $W(f,g)(x) \neq 0$ (Wronskian) for all x in the interval I.

W(f,g)(x) = 0 (Wronskian) for all x in the interval I.

W(f,g)(x) may or may not be zero for all x in the interval I.

W(f,g)(x) is not defined for all x in the interval I.



O

0

C

Marks: 1 (Budgeted Time 1 Min)

Question No : 36 of 52

If the auxiliary equation has roots -2, -2, then the general solution of the differential equation is_

Answer (Please select your correct option)



Marks: 1 (Budgeted Time 1 Min)

Question No : 37 of 52

If the annihilator operator of 2x is D^2 and of xe^{3x} is $(D-3)^2$, then which of the following is the correct option?

The annihilator operator of
$$2x + xe^{3x}is(D-3)^2$$
.
The annihilator operator of $2x + xe^{3x}isD^2$.
The annihilator operator of $2x + xe^{3x}isD^2 + (D-3)^2$.
The annihilator operator of $2x + xe^{3x}isD^2 + (D-3)^2$.

Marks: 1 (Budgeted Time 1 Min)



Question No : 38 of 52

If
$$y_1 = x$$
 and $y_2 = xe^x$ are the first and second solution of $x^2 \frac{d^2 y}{dx^2} - x(x+2)\frac{dy}{dx} + (x+2)y = 0$ on $(0, \infty)$, then which of the following is t

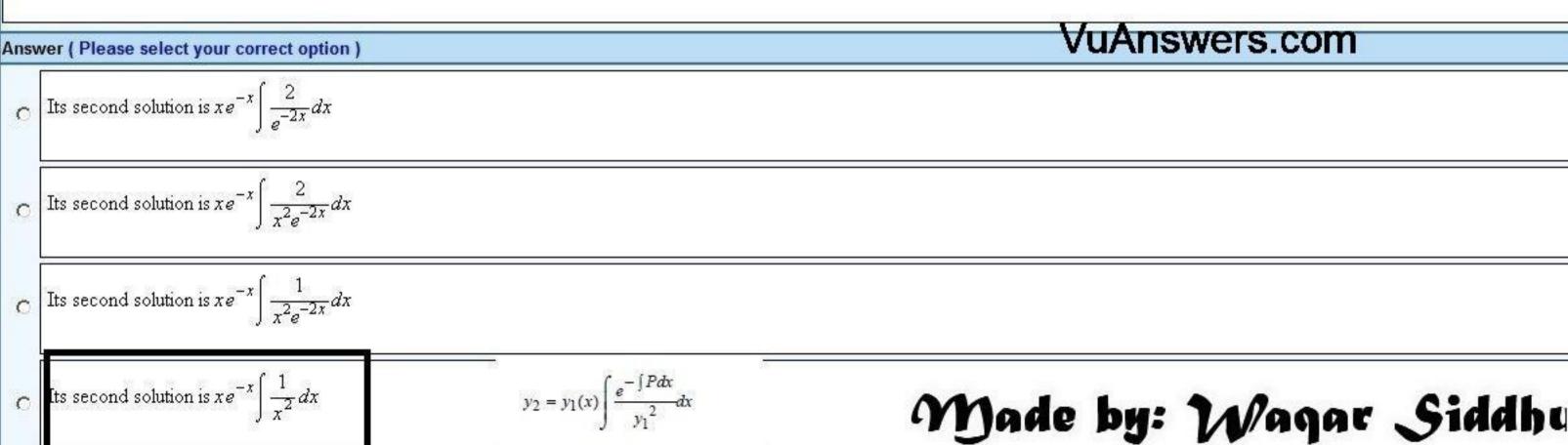
Marks: 1 (Budgeted Time 1 Min)

the most accurate option?



Question No : 39 of 52

If
$$y_1 = xe^{-x}$$
 is the first solution of the differential equation $\frac{d^2y}{dx^2} + 2\frac{dy}{dx} + y = 0$, then which of the following is true for it?



Marks: 1 (Budgeted Time 1 Min)

Question No : 40 of 52

If
$$x^2 \frac{d^2 y}{dx^2} - 2 \frac{dy}{dx} = 0$$
 is the particular form of $\frac{d^2 y}{dx^2} + P(x) \frac{dy}{dx} + Q(x)y = 0$, then which of the following is the most accurate option?

Answer (Please select your correct option)

$$P(x) = \frac{2}{x^{2}} \text{ and } Q(x) = 0$$

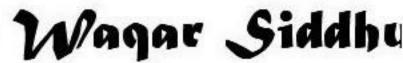
$$I.F = e^{x} P(x) = -2 \text{ and } Q(x) = x^{2}$$

$$P(x) = \frac{-2}{x^{2}} \text{ and } Q(x) = 0$$

$$P(x) = 0 \text{ and } Q(x) = \frac{-2}{x^{2}}$$

$$Made ba:$$

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