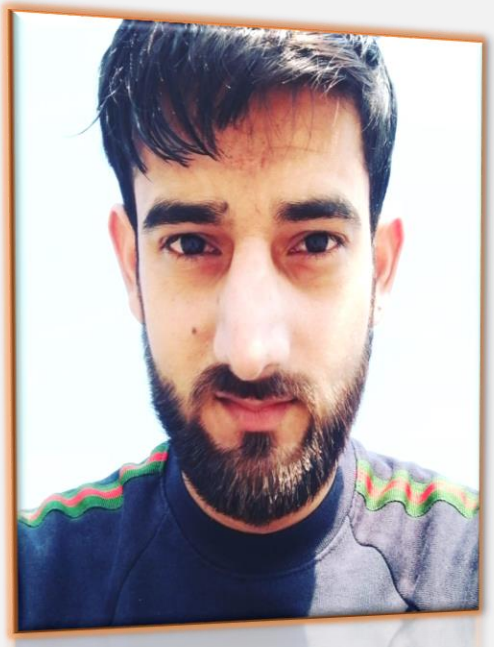

MTH401 QUIZ(1)

Lecture: 1 to 8

RIZ MUGHAL
SQA ENGINEER:

I'm providing 100% correct quiz solution.

You can visit my YouTube channel for more quiz solution, also final year project including project assignments, and viva.

YOUTUBE:

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sec(s)

MTH401:Quiz NO.01

Quiz Start Time: 05:30 PM, 16 May 2021

Question # 1 of 10 (Start time: 05:30:44 PM, 16 May 2021)

Total Marks:

The integrating factor for the first order linear differential equation : $\frac{dy}{dx} + y\cot x = \sin^2 x$ *is* $- - -$

Select the correct option

Reload Math Equations

- (●) $\sin x$
- ( ) $\cos x$
- ( ) $e^{\sin x}$
- ( ) $e^{\cos x}$

MTH401:Quiz NO.01 Quiz Start Time: 05:30 PM, 16 May 2021

Question # 2 of 10 (Start time: 05:31:02 PM, 16 May 2021) Total Marks: 1

If the non - exact differential equation M(x,y)dx + N(x,y)dy = 0, is of the form yf(xy)dx + xg(xy)dy = 0, then the integrating factor is - - - -

Select the correct option

Reload Math Equations

- $\frac{\frac{\partial N}{\partial x} - \frac{\partial M}{\partial y}}{M}$
- $\frac{\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x}}{N}$
- $\frac{1}{xM - yN}, xM - yN \neq 0$
- $\frac{1}{xM + yN}, xM + yN \neq 0$

MTH401:Quiz NO.01 Quiz Start Time: 05:30 PM, 16 M

Question # 3 of 10 (Start time: 05:31:42 PM, 16 May 2021) Total

Separable form $f(y)dy = g(x)dx$, of the differential equation: $y - x\frac{dy}{dx} = a\left(y^2 + \frac{dy}{dx}\right)$ is-----.

Select the correct option

Reload Math Equ

- $\frac{1}{y(1+ay)}dy = \frac{1}{x+a}dx$
- $\frac{1}{y(1-ay)}dy = \frac{1}{x+a}dx$
- $\frac{1}{y(1+ay)}dy = \frac{1}{x-a}dx$
- $\frac{1}{y(1-ay)}dy = \frac{1}{x-a}dx$

MTH401:Quiz NO.01 Quiz Start Time: (

Question # 4 of 10 (Start time: 05:31:55 PM, 16 May 2021)

Which of following function will satisfy the differential equation: $\frac{dy}{dx} = -\lambda y$?

Select the correct option

Rel

- $y = ce^{\lambda x}$
- $y = -ce^{\lambda x}$
- $y = ce^{-\lambda x}$
- $y = -ce^{-\lambda x}$

MTH401:Quiz NO.01 Quiz Start Time: 05:30 PM

Question # 5 of 10 (Start time: 05:32:09 PM, 16 May 2021)

$ydx - y(\sin x)dy = 0$, is an example of - - - differential equation.

Select the correct option

Reload Ma

- Exact
- Non-exact
- Non-linear
- Non-homogeneous

MTH401:Quiz NO.01 Quiz Start Time: 05:30 PM.

Question # 6 of 10 (Start time: 05:32:22 PM, 16 May 2021) T

Which of the following substitution will transform the differential equation : $\frac{dy}{dx} = \frac{x+y+1}{x+y-1}$, *in to separ*

Select the correct option

Reload Math

- ○ $x = X + h, y = Y + k$
- ○ $x = vy$
- ○ $y = vx$
- ● $z = x + y$

MTH401:Quiz NO.01

Quiz Start Time: 05:30 PM, 16 Ma

Question # 7 of 10 (Start time: 05:32:38 PM, 16 May 2021)

Total M

If the differential equation: $M(x,y)dx + N(x,y)dy = 0$ is not exact, then after - - - an appropriate function $u(x,y)$, we can from it to be exact.

Select the correct option

Reload Math Equa

- adding
- subtracting
- multiplying by
- dividing by

MTH401:Quiz NO.01 Quiz Start Time: 05:30 PM, 16 May 2

Question # 8 of 10 (Start time: 05:32:56 PM, 16 May 2021) Total Mark

The integrating factor for the first order linear differential equation : $\frac{dy}{dx} + y\tan x = \cos^2 x$ *is* – – –

Select the correct option

Reload Math Equatio

- e^{y^2}
- $e^{\tan x}$
- $\sec x$
- $e^{\sec x}$

MTH401:Quiz NO.01 Quiz Start Time

Question # 9 of 10 (Start time: 05:33:11 PM, 16 May 2021)

Which of following is an implicit solution of the differential equation: $\frac{dy}{dx} = -\frac{x}{y}$.

Select the correct option

R

- $x + y + 4 = 0$
- $x^2 + y^2 - 4 = 0$
- $x^2 - y^2 + 4 = 0$
- $x^2 - y^2 - 4 = 0$

MTH401:Quiz NO.01 Quiz Start Time: 05:30 PM, 16 May 2

Question # 10 of 10 (Start time: 05:33:24 PM, 16 May 2021) Total Mark

The differential equation $(\sin 2x - \tan y)dx - x\sec^2 y dy = 0$ *is exact because* – – – – – – – – –.

Select the correct option

Reload Math Equatio

- (●) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x} = -\sec^2 y$
- ( ) $\frac{\partial M}{\partial x} = \frac{\partial N}{\partial y} = -\sec^2 y$
- ( ) $\frac{\partial M}{\partial y} = \frac{\partial N}{\partial x} = \sec^2 y$
- ( ) $\frac{\partial M}{\partial x} = \frac{\partial N}{\partial y} = \sec^2 y$

2nd account

MTH401:Quiz NO.01 Quiz Start Time: 05:35 PM, 16 May

Question # 1 of 10 (Start time: 05:35:49 PM, 16 May 2021) Total Ma

$A\ differential\ equation\ M\,(x,y)\,dx + N(x,y)dy = 0\ is\ exact\ if\ and\ only\ if\ ---.$

Select the correct option

Reload Math Equati

- $\frac{\partial}{\partial x}M(x,y) = \frac{\partial}{\partial y}N(x,y)$
- $\frac{\partial}{\partial y}M(x,y) = \frac{\partial}{\partial x}N(x,y)$
- $\frac{d}{dx}M(x,y) = \frac{d}{dy}N(x,y)$
- $\frac{d}{dy}M(x,y) = \frac{d}{dx}N(x,y)$

MTH401:Quiz NO.01

Quiz Start Time: 05:35 I

Question # 2 of 10 (Start time: 05:36:14 PM, 16 May 2021)

Which of the following substitution will transform the differential equation : $\frac{dy}{dx} = \frac{y}{x} + \sec\left(\frac{y}{x}\right)$, *in to se*

Select the correct option

Reload M

- $y = v + x$
- $y = v - x$
- $y = vx$
- $x = vy$

MTH401:Quiz NO.01

Quiz Start Time: 05:35 PM, 16 Ma

Question # 3 of 10 (Start time: 05:36:25 PM, 16 May 2021)

Total M

Which of the following is first order linear equation in unknown variable y?

Select the correct option

Reload Math Equa

- $x\frac{dy}{dx} + (\sin x)\, y = \cos x$
- $y\frac{dx}{dy} + (\sin y)\, x = \cos y$
- $y\frac{dx}{dy} + (\sin y)\, x = \cos x$
- $y\frac{dx}{dy} + (\sin x)\, x = \cos y$

MTH401:Quiz NO.01 Quiz

Question # 4 of 10 (Start time: 05:36:40 PM, 16 May 2021)

$For\ the\ non-exact\ differential\ equation\ M(x,y)dx + N(x,y)dy = 0, if \frac{\frac{\partial N}{\partial x} - \frac{\partial M}{\partial y}}{M} is\ a\ function\ of\ y, then\ th$

Select the correct option

○	function of x
●	function of y
○	multi - variable function of both x and y
○	constant

MTH401:Quiz NO.01 Quiz Start

Question # 5 of 10 (Start time: 05:36:53 PM, 16 May 2021)

The differential equation: $\sqrt[3]{\left(\frac{d^2y}{dx^2}\right)^2} = \sqrt{1+\left(\frac{dy}{dx}\right)^2}$ has ---------.

Select the correct option

- [x] order 2 and degree 4
- [ ] order 4 and degree 2
- [ ] both order and degree equal 2
- [ ] both order and degree equal 4

MTH401:Quiz NO.01 Quiz Start

Question # 6 of 10 (Start time: 05:37:06 PM, 16 May 2021)

$\frac{d^2y}{dx^2} + 5\left(\frac{dy}{dx}\right)^3 - 3y = e^{\sin x}$ is an example of --------- differential equation.

Select the correct option

- ordinary linear
- ordinary non-linear
- partial linear
- partial non-linear

MTH401:Quiz NO.01 Quiz Start Time: 05:35 PM, 16 M

Question # 7 of 10 (Start time: 05:37:19 PM, 16 May 2021) Total

$$The\ differential\ equation\ \frac{dx}{dy} + \frac{1}{y}x = 2\sin y\ is\ first\ order\ linear\ in\ unknown\ ---$$

Select the correct option

Reload Math Eq

- variable x
- variable y
- multi - variables x and y
- $\frac{dy}{dx}$

MTH401:Quiz NO.01 Quiz Start Time:

Question # 8 of 10 (Start time: 05:37:32 PM, 16 May 2021)

Separable form of the differential equation: $\frac{dy}{dx}=y-1$ is ------, where $v=y-1.$

Select the correct option

RIZ MUGHAL

- $\frac{dx}{x}=dv$
- $dx=vdv$
- $\frac{dv}{v}=dx$
- $\frac{dv}{v}=\frac{dx}{x}$

MTH401:Quiz NO.01 Quiz Start Time: 05:35 PM, 16 Ma

Question # 9 of 10 (Start time: 05:37:56 PM, 16 May 2021) Total M

$If x^2y^3dx + x^3y^2dy = 0$ *has the equivalent form as* $d\left(\frac{1}{3}x^3y^3\right) = 0$, *then its solutionis* $---$.

Select the correct option

Reload Math Equ

- $x^3 + y^3 = c$
- $x^3 - y^3 = c$
- $x^3y^3 = c$
- $\frac{x^3}{y^3} = c$

MTH401:Quiz NO.01 Quiz Start

Question # 10 of 10 (Start time: 05:38:12 PM, 16 May 2021)

Which of the following function would satisfy: $\frac{dy}{dx} = \frac{d^2y}{dx^2} = \cdots = \frac{d^ny}{dx^n}$?

Select the correct option

- $y = Ae^x$
- $y = Axe^x$
- $y = Ae^{x^n}$
- $y = Ax^ne^{x^n}$

3rd account

MTH401:Quiz NO.01 Quiz Start Time: 05:39 PM

Question # 1 of 10 (Start time: 05:39:46 PM, 16 May 2021)

Which of the following is first order linear equation in unknown variable x?

Select the correct option

Reload Mat

- $x\frac{dy}{dx} + (\sin x)\, y = \cos x$
- $y\frac{dx}{dy} + (\sin y)\, x = \cos y$
- $y\frac{dx}{dy} + (\sin y)\, x = \cos x$
- $y\frac{dx}{dy} + (\sin x)\, x = \cos y$

MTH401:Quiz NO.01

Quiz Start Time: 05:39 PM, 16 M

Question # 2 of 10 (Start time: 05:40:05 PM, 16 May 2021) Total

Separable form $f(y)dy + g(x)dx = 0$, of the differential equation: $x \sin y dx + \left(x^2 + 1\right) \cos y dy = 0$ is-----.

Select the correct option

Reload Math Eq

- $\tan y dy + \frac{x}{x^2+1} dx = 0$
- $\cot y dy + \frac{x}{x^2+1} dx = 0$
- $\tan y dy + \frac{x}{x^2-1} dx = 0$
- $\cot y dy + \frac{x}{x^2-1} dx = 0$

MTH401:Quiz NO.01 Quiz Start Time: 05:39 PM, 16 May

Question # 3 of 10 (Start time: 05:40:17 PM, 16 May 2021) Total Ma

$If x^2y^3dx + x^3y^2dy = 0$ *has the equivalent form as* $d\left(\frac{1}{3}x^3y^3\right) = 0$, *then its solutionis* $---$.

Select the correct option

Reload Math Equati

- $x^3 + y^3 = c$
- $x^3 - y^3 = c$
- $x^3y^3 = c$
- $\frac{x^3}{y^3} = c$

MTH401:Quiz NO.01

Question # 4 of 10 (Start time: 05:40:31 PM, 16 May 2021)

$\frac{d^3y}{dx^3} + y^2 = 0$ is a ------differential equation of degree----.

Select the correct option

- linear, 1
- linear, 3
- non-linear, 1
- non-linear, 3

MTH401:Quiz NO.01

Question # 5 of 10 (Start time: 05:40:44 PM, 16 May 2021)

$If\ the\ non-exact\ differential\ equation\ M(x,y)dx + N(x,y)dy = 0 is\ homogeneous\ and\ xM(x,y) + yN($

Select the correct option

○	$\frac{\frac{\partial N}{\partial x} - \frac{\partial M}{\partial y}}{M}$
○	$\frac{\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x}}{N}$
○	$\frac{1}{xM - yN}, xM - yN \neq 0$
●	$\frac{1}{xM + yN}, xM + yN \neq 0$

MTH401:Quiz NO.01

Quiz Start Time: 05:39 PM, 16 M

Question # 6 of 10 (Start time: 05:40:58 PM, 16 May 2021)

Total

The integrating factor for the first order linear differential equation : $\frac{dy}{dx} + y\tan x = \cos^2 x$ *is* $-$

Select the correct option

Reload Math Equ

- e^{y^2}
- $e^{\tan x}$
- $\sec x$
- $e^{\sec x}$

MTH401:Quiz NO.01

Question # 7 of 10 (Start time: 05:41:10 PM, 16 May 2021)

For the nonexact differential equation $\left(x^2y - 2xy^2\right)dx - \left(x^3 - 3x^2y\right)dy = 0, if xM(x,y) + yN(x,y) = x^2y$

Select the correct option

- ● $\frac{1}{x^2y^2}$
- ○ $-\frac{1}{x^2y^2}$
- ○ $e^{x^2y^2}$
- ○ $e^{-x^2y^2}$

MTH401:Quiz NO.01 Quiz Start Time: 05:39 PM. 1

Question # 8 of 10 (Start time: 05:41:22 PM. 16 May 2021) To

For the non - exact differential equation

$$ydx-(y-3x-3)\,dy=0, if \frac{\frac{\partial N}{\partial x}-\frac{\partial M}{\partial y}}{M}=\frac{2}{y}$$

Select the correct option

Reload Math

- $\frac{-1}{y^2}$
- $\frac{1}{y^2}$
- $-y^2$
- y^2

MTH401:Quiz NO.01

Quiz Start Time: 05:39 PM

Question # 9 of 10 (Start time: 05:41:38 PM, 16 May 2021)

Which of the following substitution will transform the differential equation : $\frac{dy}{dx} = \frac{x+y+1}{x+2y+1}$, *in to separ*

Select the correct option

Reload Mat

○	$y = v + x$
○	$y = vx$
○	$x = vy$
●	$x = X + h, y = Y + k$

MTH401:Quiz NO.01 Quiz Start Tim

Question # 10 of 10 (Start time: 05:41:51 PM, 16 May 2021)

General solution of the separable differential equation: $\frac{\sec^2 y}{\tan y}dy = dx$ is-----.

Select the correct option

- $y = \tan^{-1}(c + e^x)$
- $y = \cot(c + e^x)$
- $y = \tan^{-1}(ce^x)$
- $y = \cot(ce^x)$

Thank you for watching ☺

Share with your fellows

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