MTH301 Grand Quiz 2020 (Covid-19)

100% Correct Solve (Alhamdulilah) 26/12/2020

BY Virtual Assistance Sonu Ilyas Mughal

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Question # 2 of 30 (Start time: 06:51:42 AM, 26 December 2020)

Partial derivative of

$$f(x,y) = x^2 + y^2 + xy$$

with respect to y is

Select the correct option

○	$x^2 + 2y + xy$
●	$x^2 + 2y + x$
○	$2y + x$
○	None of these

MTH301:Grand Quiz **Quiz Start Time: 06:49 AM,**

Question # 3 of 30 (Start time: 06:52:32 AM, 26 December 2020)

If the partial derivative (w.r.t 'x' or 'y') at any point on the surface: "z=f(x,y)" is zero, then tangent plane at that point will be--------to XY-plane.

Select the correct option

- (●) parallel
- ( ) perpendicular

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MTH301:Grand Quiz **Quiz Start Time: 06:49 AM**

Question # 4 of 30 (Start time: 06:53:28 AM, 26 December 2020)

Which of the following function is not the function of one variable

Select the correct option

- y = f(x)
- y = f(x, y)
- z= g(n) + 2
- m = g(s) + constant

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Quiz Start Tim

Question # 5 of 30 (Start time: 06:54:22 AM, 26 December 2020)

$The\ number\ \sqrt{3}\ \ is$

Select the correct option

- rational
- irrational

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Question # 6 of 30 (Start time: 06:55:25 AM, 26 December 2020)

Face of the parabola (y = ax^2 + bx + c) is opening downward when

Select the correct option

- a > 0
- a < 0
- b > 0
- b < 0

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Click to

Question # 7 of 30 (Start time: 06:56:09 AM, 26 December 2020)

For each fixed $x; a \leqslant x \leqslant b$, the function $f(x, y)$ is a function of$y$alone, then $A(x)$ the area of this function on the interval $c \leqslant y \leqslant d$ then the volume is

Select the correct option

Re

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$$V(S) = \int_c^d \left(\int_a^b f(x, y) dx \right) dy$$

$$V(S) = \int_a^b \left(\int_c^d f(x, y) dy \right) dx$$

$$V(S) = \int_c^d \left(\int_a^b f(x, y) dx \right) dy$$

$$V(S) = \int_a^b \left(\int_c^d f(x, y) dx \right) dy$$

Click to Save Answer & Mov

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Quiz Start Time: 06:49 AM

Question # 8 of 30 (Start time: 06:57:14 AM, 26 December 2020)

$if\ a\ function\ of\ two\ variables\ is\ defined\ as\ s = f(m,t)\ where\ \ m = g(u)\ and\ \ t = h(u)\ \ then$

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Select the correct option

Reloa

- $\frac{ds}{du} = \frac{\partial m}{\partial u} + \frac{\partial t}{\partial u}$
- $\frac{ds}{du} = \frac{\partial s}{\partial u}.du + \frac{\partial s}{\partial t}.du$
- $\frac{ds}{du} = \frac{\partial g}{\partial m}.\frac{dm}{du} + \frac{\partial h}{\partial t}.\frac{dt}{du}$
- $\frac{ds}{du} = \frac{\partial s}{\partial m}.\frac{dm}{du} + \frac{\partial s}{\partial t}.\frac{dt}{du}$

Click to Save Answer & Move

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Quiz Start Time: 06:49

Question # 9 of 30 (Start time: 06:58:02 AM, 26 December 2020)

$$\int_0^{\ln 6}\int_0^{\ln 3} f(x,y)\,dx\,dy = \int_0^{\ln 3}\int_0^{\ln 6} f(x,y)\,dy\,dx$$

Select the correct option

Re

- True
- False

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Question # 10 of 30 (Start time: 06:58:49 AM, 26 December 2020)

$$The\ number\ \sqrt{2}\ is$$

Select the correct option

○	rational
●	irrational

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Question # 11 of 30 (Start time: 06:59:30 AM, 26 December 2020)

A quotient of continuous function is continuous, expect where the denominator is _____.

Select the correct option

- -1
- zero
- 1
- infinite number

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Question # 12 of 30 (Start time: 07:00:19 AM, 26 December 2020)

Gradient of a Temperature of any geographical region on earth results into a--------

Select the correct option

- (●) Vector quantity
- ( ) Scalar quantity

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Click to Sav

Question # 13 of 30 (Start time: 07:00:58 AM, 26 December 2020)

The expression $\int_a^b {f(x,y)dx} $ is a function of .....

Select the correct option

○	x
●	y
○	both x and y
○	None of these

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Click to

Question # 14 of 30 (Start time: 07:01:47 AM, 26 December 2020)

Let m be the slope and $P_0(x_0, y_0)$ be the point of required line, then point - slope form is _____.

SONU MUGHA

Select the correct option

Rel

- $y = m\,x + c$
- $y = m\,x.c$
- $y + y_0 = m(x + x_0)$
- $y - y_0 = m(x - x_0)$

Question # 15 of 30 (Start time: 07:02:40 AM, 26 December 2020)

To determine a point in plane (in 2 dimension) how many axes are required

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Select the correct option

- 1
- 2
- 3
- none

Click to Save A

Question # 16 of 30 (Start time: 07:03:32 AM, 26 December 2020)

spherical coordinate θ is related to the cylindrical coordinate as

Select the correct option

- $\theta = \varphi$
- $\theta = \rho \sin \varphi$
- $\theta = \rho \cos \varphi$
- $\theta = \theta$

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Click to Save Answer &

Question # 18 of 30 (Start time: 07:05:32 AM, 26 December 2020)

$x = 3\cos\theta,\ y = 3\sin\theta;\ 0 \leqslant \theta \leqslant \pi$, is a _____ form of a curve in the plane.

Select the correct option

Re

- explicit
- implicit
- parametric
- parametric vector

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Question # 19 of 30 (Start time: 07:06:24 AM, 26 December 2020)

For a line joining two points P(1, 1, 1) and Q(2, 2, 2) direction cosines are _____

(distance between points is $\sqrt{3}$)

Select the correct option

●	SONU MUGHAL $(\frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}}, \frac{1}{\sqrt{3}})$
○	$(\frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}}, \frac{2}{\sqrt{3}})$
○	$(\frac{3}{\sqrt{3}}, \frac{3}{\sqrt{3}}, \frac{3}{\sqrt{3}})$
○	$(-\sqrt{3}, -\sqrt{3}, -\sqrt{3})$

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Question # 20 of 30 (Start time: 07:07:03 AM, 26 December 2020)

In Cartesian coordinate system all axes are at------- degree to each other

Select the correct option

- 45
- 90
- 120
- 180

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Click t

Question # 21 of 30 (Start time: 07:07:40 AM, 26 December 2020)

The equation of the line segment between the points $(5, 0)$ and $(0, 4)$ where slopeis - $4/5$ is

Select the correct option

Re

●	SONU $y = (-4/5)x + 4$
○	$y = (-4/5)x - 4$
○	$y = (4/5)x + 4$
○	$y = (4/5)x - 4$

Click to Save Answer & Mov

Question # 22 of 30 (Start time: 07:08:24 AM, 26 December 2020)

The differentiable functions are continuous ..... in its domain.

Select the correct option

- only at (0,0)
- everywhere
- somewhere
- nowhere

SONU

Question # 23 of 30 (Start time: 07:09:07 AM, 26 December 2020)

$$if\ z = f(x)\ and\ x = sint\ then\ by\ chain\ rule\ \frac{dz}{dt} =$$

Select the correct option

●	$f'(\sin t).cost$ SONU MUGHAL
○	$f'(\sin t).sint$
○	$-f'(\sin t).cost$
○	$-f'(\sin t).sint$

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Question # 24 of 30 (Start time: 07:09:45 AM, 26 December 2020)

$The\ number\ \pi\ is$

Select the correct option

○	rational
●	irrational

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Question # 25 of 30 (Start time: 07:10:36 AM, 26 December 2020)

Area of integral is equal to -------

Select the correct option

○	1/2 (base)*(height)
●	1/2 (base)*(altitude) SONU
○	1/2 (base)*(width)
○	none of these

Question # 26 of 30 (Start time: 07:11:11 AM, 26 December 2020)

$$\int_0^{10} (x^3y + y^2)\ dy = - - - - - - -$$

Select the correct option

○	$1000y^2 + \frac{10y^3}{3}$
○	$100x^3 + 1000$
●	SONUU $50x^3 + \frac{1000}{3}$
○	$500y^2 + \frac{1000}{3}$

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Question # 27 of 30 (Start time: 07:11:46 AM, 26 December 2020)

The function f(x,y) grow most rapidly in the direction of

Select the correct option

- (●) gradient vector
- ( ) unit vector
- ( ) x-axis
- ( ) y-axis

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Question # 28 of 30 (Start time: 07:12:24 AM, 26 December 2020)

The product of continuous functions is continuous

Select the correct option

- (●) True
- ( ) False

SONU

Question # 29 of 30 (Start time: 07:12:58 AM, 26 December 2020)

If $w = f(x)$ where $x = g(r, s)$ then $\frac{\partial w}{\partial s} =$

Select the correct option

○	$\frac{\partial w}{\partial s} = \frac{dw}{ds}\frac{\partial s}{\partial s}$
●	SONU $\frac{\partial w}{\partial s} = \frac{dw}{dx}\frac{\partial x}{\partial s}$
○	$\frac{\partial w}{\partial s} = \frac{dw}{ds}\frac{\partial s}{\partial r}$
○	$\frac{\partial w}{\partial s} = \frac{dw}{dr}\frac{\partial r}{\partial s}$

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Question # 30 of 30 (Start time: 07:13:34 AM, 26 December 2020)

In rectangular coordinate system the point (-3, 2) is in

Select the correct option

- first quadrant
- second quadrant
- third quadrant
- fourth quadrant

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Question # 30 of 30 (Start time: 07:13:34 AM, 26 December 2020)

In rectangular coordinate system the point (-3, 2) is in

Select the correct option

- first quadrant
- second quadrant
- third quadrant
- fourth quadrant

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Question # 1 of 30 (Start time: 07:21:27 AM, 26 December 2020)

Let f be a function of two variables with continuous 2nd ordered partial derivatives in some circle centered at a critical point$(x_0, y_0)$and let$D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

Select the correct option

Re

○	$if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at(x_0, y_0).
○	$if D > 0 and f_{xx}(x_0, y_0) > 0$, then no conclusion can be drawn.
● SONU MUGHAL	$if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative minimum at(x_0, y_0).
○	$if D < 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at(x_0, y_0).

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Question # 2 of 30 (Start time: 07:22:19 AM, 26 December 2020)

The value $f(x_0, y_0)$ is a relative maximum of $f(x, y)$ on domain D, if there exists an open disc $K \subset D$ with center $(x_0, y$

Select the correct option

- $f(x_0, y_0) \leqslant f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- SONU $f(x_0, y_0) \geqslant f(x, y)$ for all $(x, y) \in K$

Question # 3 of 30 (Start time: 07:22:55 AM, 26 December 2020)

If f is a function of $x$and then the gradient of f is defined as

Select the correct option

- $\nabla f(x,y) = f_x(x,y)i - f_y(x,y)j$
- SONU $\nabla f(x,y) = f_x(x,y)i + f_y(x,y)j$
- $\nabla f(x,y) = f_y(x,y)i + f_x(x,y)j$
- $\nabla f(x,y) = f_x(x,y)j + f_y(x,y)i$

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Question # 4 of 30 (Start time: 07:23:40 AM, 26 December 2020)

If the rectangular components of a vector in xy-plane are [3,4], then the magnitude of the vector is ----------.

Select the correct option

- 12
- 7
- 5 SONU
- 1

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Question # 5 of 30 (Start time: 07:24:24 AM, 26 December 2020)

To determine a point on a real line how many axis are required (i.e. in 1 dimension)

Select the correct option

- (●) 1

SONU

- ( ) 2
- ( ) 3
- ( ) none

Question # 6 of 30 (Start time: 07:25:05 AM, 26 December 2020)

The partial definite integral of the function f(x,y) is evaluated by holding x fixed and integrating with respect to y.

Select the correct option

- (●) True
- ( ) False

SONU

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Question # 7 of 30 (Start time: 07:25:40 AM, 26 December 2020)

Gradient of a scalar function always results in a.....function.

Select the correct option

- scalar
- vector
- discontinuous
- continuous

SONU

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Question # 7 of 30 (Start time: 07:25:40 AM, 26 December 2020)

Gradient of a scalar function always results in a.....function.

Select the correct option

- scalar
- vector
- discontinuous
- continuous

SONU

Question # 8 of 30 (Start time: 07:27:08 AM, 26 December 2020)

$$value\ of\ the\ function\ f(x,y,z) = x^2 + y^2 + z^2\ at\ the\ \text{point}\ (0,1,0)\ is$$

Select the correct option

●	1 SONU
○	0
○	2
○	3

Question # 9 of 30 (Start time: 07:27:42 AM, 26 December 2020)

If w = x + y while x = r + sandy = r - s then which of the following is partial derivative of w w.r.tr?

Select the correct option

Reload

- (●) 2
  SONU
- ( ) 0
- ( ) 1
- ( ) -1

Question # 10 of 30 (Start time: 07:28:19 AM, 26 December 2020)

If w = x + y while x = r + sand y = r - s then which of the following is partial derivative of w w.r.t s?

Select the correct option

Rel

- 2
- 0
- 1
- -1

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Click to Save Answer & Move

Question # 11 of 30 (Start time: 07:28:56 AM, 26 December 2020)

The expression

$$\int_{}^{d}\int_{}^{b} f(x, y)\, dx\, dy$$

Select the correct option

○	iterated
○	repeated
○	irregular
●	iterated and repeated

SONU

Question # 12 of 30 (Start time: 07:29:33 AM, 26 December 2020)

The differentiable functions are continuous ..... in its domain.

Select the correct option

- only at (0,0)
- everywhere
- somewhere
- nowhere

SONU

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Question # 13 of 30 (Start time: 07:30:06 AM, 26 December 2020)

Value of the function $f(x, y) = x^3y$ at the point (x^2, x^3) is _____.

Select the correct option

- $x^2 . x^3$
- $x^2 . x^6$
- x^6
- x^9

SONU

Question # 14 of 30 (Start time: 07:30:44 AM, 26 December 2020)

The directional derivative of a function $f(x,y)$ in the direction of $\vec{u}$ can be written as

Select the correct option

○	$\nabla f(x,y) \times \widehat{u}$
●	$\nabla f(x,y).\widehat{u}$ SONU
○	$\nabla f(x,y).u$
○	$\widehat{u} \times \nabla f(x,y)$

Question # 15 of 30 (Start time: 07:31:17 AM, 26 December 2020)

The set of all values which the function assigns for every element of the domain is known as _____ of the function.

Select the correct option

- co-domain
- domain
- range
- subset

SONU



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Question # 16 of 30 (Start time: 07:31:49 AM, 26 December 2020)

spherical coordinate ρ is related to the rectangular coordinate as

Select the correct option

Reload Ma

- $\rho = \sqrt{(x+y+z)}$
- $\rho = x+y+z$
- $\rho = \sqrt{(x^2+y^2+z^2)}$
- $\rho = \frac{z}{\sqrt{(x^2+y^2+z^2)}}$

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Question # 17 of 30 (Start time: 07:32:31 AM, 26 December 2020)

In rectangular coordinate system, the point (1, 5) lies in

Select the correct option

- (●) first quadrant
- ( ) second quadrant
- ( ) third quadrant
- ( ) fourth quadrant

Question # 18 of 30 (Start time: 07:33:15 AM, 26 December 2020)

The value $f(x_0, y_0)$ is an absolute maximum of $f(x, y)$ on domain D, if -

Select the correct option

○	$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$
●	SONU $f(x_0, y_0) \geqslant f(x, y)$ for all $(x, y) \in D$
○	$f(x_0, y_0) \leqslant f(x, y)$ for all $(x, y) \in D$
○	$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$

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Question # 19 of 30 (Start time: 07:33:58 AM, 26 December 2020)

Cross product of two non zero vectors results into a vector lying---------.

Select the correct option

- ○ in the plane perpendicular to least one vector
- ○ in the plane perpendicular to none of these two vectors
- ○ along one of the vector
- ● in the plane perpendicular to both vectors

Clic

Question # 20 of 30 (Start time: 07:34:35 AM, 26 December 2020)

If $f(x,y,z) = x^2 + 2y - 3z^2$ then f_x, f_y and f_z are

Select the correct option

○	$f_x = 2x, f_y = 2$and $f_z = 6z$
○	$f_x = 2x, f_y = 2y$and $f_z = 6z$
● SONU	$f_x = 2x, f_y = 2$and $f_z = -6z$
○	$f_x = 2x, f_y = 2y$and $f_z = -6z$

Question # 21 of 30 (Start time: 07:35:11 AM, 26 December 2020)

If $f(x, y)$ has a relative extrema at (x_0, y_0), then

Select the correct option

Re

- $f_x(x_0, y_0) > 0,\ f_y(x_0, y_0) > 0$
- $f_x(x_0, y_0) < 0,\ f_y(x_0, y_0) < 0$
- $f_x(x_0, y_0) = 0,\ f_y(x_0, y_0) = 0$
- $f_x(x_0, y_0) < 0,\ f_y(x_0, y_0) > 0$

Click to Save Answer & Mov

Question # 22 of 30 (Start time: 07:35:41 AM, 26 December 2020)

Range of the function is

$$f(x,y,z)=\sqrt{x^2+y^2+z^2}$$

Select the correct option

Reload Ma

○	$(-\infty,+\infty)$
○	$(-\infty,0)$
●	SONU $[0,+\infty)$
○	$(0,+\infty)$

Question # 23 of 30 (Start time: 07:36:23 AM, 26 December 2020)

After reversing the order of limits of $\int_0^{\frac{1}{2}} \int_{2x}^{1} e^{y^2}\, dy\, dx$, we get _____.

Select the correct option

Reload Ma

- $\int_0^1 \int_{2x}^{\frac{1}{2}} e^{y^2}\, dx\, dy$
- $\int_0^1 \int_0^{\frac{y}{2}} e^{y^2}\, dx\, dy$
- $\int_0^1 \int_{\frac{1}{2}}^{2x} e^{y^2}\, dx\, dy$
- $\int_0^1 \int_{\frac{y}{2}}^{0} e^{y^2}\, dx\, dy$

Click to Save Answer & Move to Nex

Question # 24 of 30 (Start time: 07:36:59 AM, 26 December 2020)

Let $P_0(x_0, y_0, z_0)$ be any point on the surface $f(x, y, z) = 0$, if $f(x, y, z)$ is differentiable at $P_0(x_0, y_0, z_0)$ then the normal line at $P_0(x_0, y_0, z_0)$ has the equation

Select the correct option

Relo

- $x = x_0 + f_x(P_0)t, y = y_0 + f_z(P_0)tandz = z_0 + f_y(P_0)t$
- $x = x_0 + f_x(P_0)t, y = y_0 + f_y(P_0)tandz = z_0 + f_z(P_0)t$

SONU

- $x = x_0 + f_x(P_0)x, y = y_0 + f_y(P_0)yandz = z_0 + f_z(P_0)z$
- $x = x_0 + f_x(x_0)t, y = y_0 + f_y(y_0)tandz = z_0 + f_z(z_0)t$

Question # 25 of 30 (Start time: 07:37:39 AM, 26 December 2020)

The product of continuous functions is continuous

Select the correct option

- (●) True
- ( ) False

SONU

Click to S

Question # 26 of 30 (Start time: 07:38:10 AM, 26 December 2020)

$$\int_0^{\ln 3} \int_0^{\ln 5} e^{u+v}\, du\, dv = \text{----------}$$

Select the correct option

○	3
○	5
○	8
●	15

Click to Save Answer

Question # 27 of 30 (Start time: 07:38:50 AM, 26 December 2020)

$$Face\ of\ the\ parabola\ y = ax^2 + bx + c\ is\ opening\ upward\ when$$

Select the correct option

- (●) a > 0
- ( ) a < 0
- ( ) b > 0
- ( ) b < 0

Question # 28 of 30 (Start time: 07:39:22 AM, 26 December 2020)

The function

$$z = f(x, y)$$

represents a ---------- in Space

Select the correct option

●	surface SONU
○	curve
○	solid
○	line

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Question # 29 of 30 (Start time: 07:40:02 AM, 26 December 2020)

If a function is of single variable i.e. w=f(x), then domain is a _____ and its graph is a curve.

Select the correct option

- ○ xy-plane
- ● subset of real line
- ○ subset of space
- ○ set of all real numbers

Question # 30 of 30 (Start time: 07:40:35 AM, 26 December 2020)

The integral to find the volume under the surface $z = 5x^3 + 5x^2y$ and the rectangle $\{(x, y) : 0 \leqslant x \leqslant 3, 0 \leqslant y \leqslant 2\}$ is $-$

Select the correct option

Relo

- $\int_0^3 \int_0^2 (5x^3 + 5x^2y)\, dx\, dy$
- $\int_0^2 \int_0^3 (5x^3 + 5x^2y)\, dx\, dy$
- $\int_0^2 \int_0^3 (5x^3 + 5x^2y)\, dydx$
- $\int_0^2 \int_0^2 (5x^3 + 5x^2y)\, dydx$

Click to Save Answer & Move

Question # 1 of 30 (Start time: 07:43:36 AM, 26 December 2020)

The function of the form $f(x, y) = 3x^2x^5$ is _____ in the domain.

Select the correct option

- discontinuous
- piecewise continuous
- continuous everywhere

SONU

- may or may not be continuous

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Question # 2 of 30 (Start time: 07:44:17 AM, 26 December 2020)

In rectangular coordinate system the point (-2,-2) is in

Select the correct option

- ○ first quadrant
- ○ second quadrant
- ● third quadrant
- ○ fourth quadrant

Question # 3 of 30 (Start time: 07:44:54 AM, 26 December 2020)

If $y = \sin x$ and $x = e^t$, then by chain rule $(dy/dx) =$

Select the correct option

○	$x \sin e^t$
●	$x \sin e^t$
○	$\sin e^t$
○	$\cos e^t$

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Question # 4 of 30 (Start time: 07:45:26 AM, 26 December 2020)

Value of the function
f(x, y, z) = xy + z at the point (1, 1, 1) is

Select the correct option

- (●) 2
- ( ) 3
- ( ) 1
- ( ) 4

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Question # 5 of 30 (Start time: 07:46:00 AM, 26 December 2020)

Gradient of a scalar function always results in a.....function.

Select the correct option

- scalar
- vector
- discontinuous
- continuous

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Question # 6 of 30 (Start time: 07:46:32 AM, 26 December 2020)

The integral of cosx with respect to x is ---------

Select the correct option

●	sinx+c
○	secx+c
○	-sinx+c
○	cscx+c

Question # 7 of 30 (Start time: 07:47:00 AM, 26 December 2020)

If $\lim_{(x,y)\to(x_0,y_0)} f(x,y) = L_1$ and $\lim_{(x,y)\to(x_0,y_0)} g(x,y) = L_2$

Select the correct option

- $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2}$; $L_2 = 0$
- SONU $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2}$; $L_2 \neq 0$
- $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2}$; $L_2 \leqslant 0$
- $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2}$; $L_2 \geqslant 0$

Click to Save Answ

MTH301:Grand Quiz

Question # 8 of 30 (Start time: 07:47:37 AM, 26 December 2020)

$$\text{The } \lim_{(x,y)\to(-1,\,1)} (x^2+y)^3 =$$

Select the correct option

○	1
○	2
○	4
●	8

SONU

Question # 9 of 30 (Start time: 07:48:17 AM, 26 December 2020)

$x = 3\cos\theta,\ y = 3\sin\theta;\ 0 \leqslant \theta \leqslant \pi$, is a _____ form of a curve in the plane.

Select the correct option

- explicit
- implicit
- parametric
- parametric vector

Question # 10 of 30 (Start time: 07:48:50 AM, 26 December 2020)

Value of the function $f(x, y, z) = \sqrt{x^2 + y^2 + z^2}$ at the point $(0, 3, 0)$ is _____.

Select the correct option

Rel

○	$2\sqrt{2}$
○	$\sqrt{3}$
●	3
○	9

SONU

Question # 11 of 30 (Start time: 07:49:25 AM, 26 December 2020) **Total Marks**

The integral to find the volume under the surface $z = 5x^3 + 5x^2y$ and the rectangle $\{(x, y) : 0 \leqslant x \leqslant 3, 0 \leqslant y \leqslant 2\}$ is ------

Select the correct option

Reload Math Equation

- $\int_0^3 \int_0^2 (5x^3 + 5x^2y)\, dx\, dy$
- SONU $\int_0^2 \int_0^3 (5x^3 + 5x^2y)\, dx\, dy$
- $\int_0^2 \int_0^3 (5x^3 + 5x^2y)\, dydx$
- $\int_0^2 \int_0^2 (5x^3 + 5x^2y)\, dydx$

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MTH301:Grand Quiz

Question # 13 of 30 (Start time: 07:50:42 AM, 26 December 2020)

Cross product of equal and opposite non-zero vectors (parallel or anti-parallel) is a------.

Select the correct option

- (●) Zero vector
- ( ) Zero scalar

Question # 14 of 30 (Start time: 07:51:09 AM, 26 December 2020)

The critical points of the given function $f(x) = x^3 + x^2 - x + 10$ where $f_x(x) = 3x^2 + 2x - 1$are _____.

Select the correct option

○	$x = \frac{-1}{3}, 1$
○	$x = \frac{-1}{3}, -1$
●	$x = \frac{1}{3}, -1$
○	$x = \frac{1}{3}, 1$

MTH301:Grand Quiz

Question # 15 of 30 (Start time: 07:51:40 AM, 26 December 2020)

The critical point which is neither minimum nor maximum is called ----------

Select the correct option

- ○ stationary point.
- ● saddle point.
- ○ extreme point.
- ○ initial point.

MTH301:Grand Quiz

Question # 16 of 30 (Start time: 07:52:10 AM, 26 December 2020)

The function z=f(x,y) of two variables x and y represents a ---------- in space.

Select the correct option

- curve
- solid
- surface

SONU

- none of these

Cli

Question # 17 of 30 (Start time: 07:52:43 AM, 26 December 2020)

The absolute extrema of $f(x) = x^2 - 2$ is _____.

Select the correct option

○	$(0, -1)$
●	$(0, -2)$
○	$(0, 0)$
○	$(0, 2)$

Click to

Question # 18 of 30 (Start time: 07:53:21 AM, 26 December 2020)

$$\int_0^{\ln 1}\int_0^{\ln 2} e^{x+y}dx\,dy = _____.$$

Select the correct option

- (●) 0
- ( ) 1
- ( ) 2
- ( ) 3

Click to Save Answer

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Question # 19 of 30 (Start time: 07:54:04 AM, 26 December 2020)

Two vectors A and B are _____ if one vector A is scalar multiple of the other vector B.

Select the correct option

- ○ equal
- ○ opposite
- ● parallel

SONU

- ○ perpendicular

MTH301:Grand Quiz

Question # 20 of 30 (Start time: 07:54:43 AM, 26 December 2020)

If the partial derivative (w.r.t 'x' or 'y') at any point on the surface:

$$z = f(x, y)$$

is Infinity, then tangent plane at that point will be perpendicular to--------.

Select the correct option

●	XY-plane
○	YZ-plane
○	XZ-plane
○	Any arbitrary plane

Question # 21 of 30 (Start time: 07:55:18 AM, 26 December 2020)

For each fixed $x; a \leqslant x \leqslant b$, the function $f(x, y)$ is a function of$y$alone, then $A(x)$ the area of this function on the interval $c \leqslant y \leqslant d$ then the volume is

Select the correct option

- $V(S) = \int_c^d \left(\int_a^b f(x, y) dx \right) dy$
- $V(S) = \int_a^b \left(\int_c^d f(x, y) dy \right) dx$
- $V(S) = \int_c^d \left(\int_a^b f(x, y) dx \right) dy$
- $V(S) = \int_a^b \left(\int_c^d f(x, y) dx \right) dy$

Click to Save Answer

MTH301:Grand Quiz

Question # 22 of 30 (Start time: 07:55:50 AM, 26 December 2020)

Two vectors are opposite vectors if they have _____.

Select the correct option

- (a) same magnitude
- (b) opposite magnitude
- (c) opposite direction
- (d) Both (a) and (c).

Clic

MTH301:Grand Quiz

Question # 23 of 30 (Start time: 07:56:27 AM, 26 December 2020)

How many directional derivatives can be found at any point on the surface:z = f(x,y)?

Select the correct option

- ○ Unique
- ○ No such derivative can be found
- ○ Finitely many
- ● Infinitely many

SONU

Question # 24 of 30 (Start time: 07:57:18 AM, 26 December 2020)

The volume of the papallelepiped with sides $\vec{a}$, $\vec{b}$ and $\vec{c}$ is determined as

Select the correct option

Relo

- $\left|\vec{a} \times \vec{b}\right| \times \left|\vec{c}\right| \cos\theta$
- $\left|\vec{a} . \vec{b}\right| . \left|\vec{c}\right| \cos\theta$
- $\left|\vec{a} . \vec{b}\right| \times \left|\vec{c}\right| \sin\theta$
- SONU $\left|\vec{a} \times \vec{b}\right| . \left|\vec{c}\right| \cos\theta$

Question # 25 of 30 (Start time: 07:58:07 AM, 26 December 2020)

If $y = x + t,\ x = e^u$ and $t = sinu$, then by chain rule, $\frac{dy}{du} =$

Select the correct option

●	$e^u + \cos u$
○	$e^u - \cos u$
○	$-e^u + \cos u$
○	$-e^u - \cos u$

Question # 26 of 30 (Start time: 07:58:45 AM, 26 December 2020)

Area of double integral can be calculated by the formula: area of $R =$ _____.

Select the correct option

○	$\frac{1}{\text{area of } R} \iint_R dA$
●	SONU $\iint_R dA$
○	$\int_R f(x,y)\,dx\,dy$
○	$\iint_R f(x,y)\,dy$

Question # 27 of 30 (Start time: 07:59:23 AM, 26 December 2020)

$$\iint_R f(x,y)\,dA \geqslant \iint_R cg(x,y)\,dA \;\; if$$

Select the correct option

- $f(x,y) \geqslant g(x,y)$
- $f(x,y) \leqslant g(x,y)$
- $f(x,y) > g(x,y)$
- $f(x,y) < g(x,y)$

Click to Save Answer &

Question # 28 of 30 (Start time: 07:59:55 AM, 26 December 2020)

If $f(x,y,z) = x^2 + 2y - 3z^2$ then f_x, f_y and f_z are

Select the correct option

○	$f_x = 2x, f_y = 2$and $f_z = 6z$
○	$f_x = 2x, f_y = 2y$and $f_z = 6z$
● SONU	$f_x = 2x, f_y = 2$and $f_z = -6z$
○	$f_x = 2x, f_y = 2y$and $f_z = -6z$

Click to Save Answ

Question # 29 of 30 (Start time: 08:00:30 AM, 26 December 2020)

Value of the function $f(x, y, z) = xy^2z^2 + 2$ at the point (t, t, t) is _____.

Select the correct option

○	t^5
●	$t^5 + 2$ SONU
○	$t^4 + 2$
○	$t^3 + 2$

Question # 30 of 30 (Start time: 08:01:09 AM, 26 December 2020)

$y = \sqrt{9 - x^2},\ -3 \leqslant x \leqslant 3$, is a _____ form of a curve in the plane.

Select the correct option

○	implicit
●	explicit
○	parametric
○	parametric vector

SONU

Click to Save Answe

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Question # 1 of 30 (Start time: 08:56:58 AM, 26 December 2020)

If we approach a point say (a, b) along different paths and get different values then it means

Select the correct option

- limit cannot be found using this technique
- limit does not exist

sonu

- limit exists
- None of these

MTH301:Grand Quiz

Question # 2 of 30 (Start time: 08:57:37 AM, 26 December 2020)

Value of the function f(x, y, z) = xy + z at the point (0, 1, 1) is _____.

Select the correct option

- 0
- 1

SONU

- 2
- 3

Question # 4 of 30 (Start time: 08:58:30 AM, 26 December 2020)

The set of all values which the function assigns for every element of the domain is known as _____ of the function.

Select the correct option

- co-domain
- domain
- range
- subset

SONU

Question # 5 of 30 (Start time: 08:59:00 AM, 26 December 2020)

The function

$$z = f(x, y)$$

represents a ---------- in Space

Select the correct option

●	surface SONU
○	curve
○	solid
○	line

Click to Sa

MTH301:Grand Quiz

Quiz Start Time: 08:56 AM,

Question # 6 of 30 (Start time: 08:59:44 AM, 26 December 2020)

If the region is bounded the left and right by vertical lines $x = a$ and $x = b$ and is bounded below and above by curves, $y = g_1(x)$ and $y = g_2(x)$, where $g_1(x) \leqslant g_2(x)$ for $a \leqslant x \leqslant b$. Then $\iint_R f(x,y)\,dA =$ _____.

Select the correct option

Reload

- $\int_a^b f(x,y)\,dx\,dy$
- $\int_{g_1(x)}^{g_2(x)} f(x,y)\,dy\,dx$
- SONU — $\int_a^b \int_{g_1(x)}^{g_2(x)} f(x,y)\,dy\,dx$
- $\int f(x,y)\,dy\,dx$

Click to Save Answer & Move to

MTH301:Grand Quiz

Question # 7 of 30 (Start time: 09:00:18 AM, 26 December 2020)

The surface:z=f(x,y) falls (decreases) most rapidly at any point in the ---------- of Gradient(z).

Select the correct option

- Direction
- Opposite to the direction

SONU

- Direction perpendicular to
- Arbitrary direction

Click

Question # 8 of 30 (Start time: 09:00:49 AM, 26 December 2020)

$$\text{If } \lim_{(x,y)\to(x_0,y_0)} f(x,y) = L_1 \quad \text{and} \quad \lim_{(x,y)\to(x_0,y_0)} g(x,y) = L_2$$

Select the correct option

- ○ $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2} \; ; L_2 = 0$
- ● SONU $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2} \; ; L_2 \neq 0$
- ○ $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2} \; ; L_2 \leqslant 0$
- ○ $\lim_{(x,y)\to(x_0,y_0)} \frac{f(x,y)}{g(x,y)} = \frac{L_1}{L_2} \; ; L_2 \geqslant 0$

Click to Save Answ

Question # 9 of 30 (Start time: 09:01:25 AM, 26 December 2020)

If $w = f(x)$ where $x = g(r, s)$ then $\frac{\partial w}{\partial r} =$

Select the correct option

○	$\frac{\partial w}{\partial r} = \frac{dw}{dy}\frac{\partial y}{\partial r}$
● SONU	$\frac{\partial w}{\partial r} = \frac{dw}{dx}\frac{\partial x}{\partial r}$
○	$\frac{\partial w}{\partial r} = \frac{dw}{ds}\frac{\partial s}{\partial r}$
○	$\frac{\partial w}{\partial r} = \frac{dw}{dr}\frac{\partial r}{\partial w}$

Click to Save Answer & M

Question # 10 of 30 (Start time: 09:02:04 AM, 26 December 2020)

Limit of a function may exist at the point where it not defined

Select the correct option

- (●) True
- ( ) False

SONU

Question # 11 of 30 (Start time: 09:02:34 AM, 26 December 2020)

The function decreases most rapidlywhen $\cos\theta = 1$ in the direction of

Select the correct option

- $D_u f = |\nabla f| \cos \frac{-\pi}{2}$
- $D_u f = |\nabla f| \cos \frac{\pi}{2}$
- $D_u f = |\nabla f| \cos \pi$ SONU
- $D_u f = |\nabla f| \cos 0$

Question # 12 of 30 (Start time: 09:03:02 AM, 26 December 2020)

The function defined by $y = 3 - x$ has an absolute minimum value at ..... on the interval $1 < x < 3$.

Select the correct option

○	2
○	1
●	0 SONU
○	-1

MTH301:Grand Quiz

Question # 13 of 30 (Start time: 09:03:38 AM, 26 December 2020)

The expression $\int_a^b f(x,y)dx$ is a function of .....

Select the correct option

○	x
●	y
○	both x and y
○	None of these

MTH301:Grand Quiz

Question # 14 of 30 (Start time: 09:04:03 AM, 26 December 2020)

Length or magnitude of a unit vector is--------.

Select the correct option

- 0
- 1

SONU

Clic

Question # 15 of 30 (Start time: 09:04:39 AM, 26 December 2020)

$$To\ find\ the\ limit\ of\ f(x,y) = \frac{xy}{(x^2+y^2)}\ at\ (0,0)\ \ if\ we\ approach\ (0,0)\ through\ the\ line\ y = x,\ we\ get\ the\ value$$

Select the correct option

Reload

- 1
- 0
- 1/2

SONU

- None of these

Click to Save Answer & Move to

Question # 16 of 30 (Start time: 09:05:20 AM, 26 December 2020)

$$value\ of\ the\ function\ f(x,y,z) = x^2 + y^2 + z^2\ at\ the\ \text{point}\ (0,1,0)\ is$$

Select the correct option

Re

- [x] 1

SONU

- [ ] 0
- [ ] 2
- [ ] 3

Click to Save Answer & Mov

Question # 17 of 30 (Start time: 09:05:53 AM, 26 December 2020)

Let m be the slope and c is y - intercept, then slope intercept form of the equation of a line is _____.

Select the correct option

Reload M

●	SONU $y = mx + c$
○	$y = mx.c$
○	$y + y_0 = m(x + x_0)$
○	$y - y_0 = m(x - x_0)$

Click to Save Answer & Move to N

Question # 18 of 30 (Start time: 09:06:38 AM, 26 December 2020)

Range of the function is

$$f(x,y,z)=\sqrt{x^2+y^2+z^2}$$

Select the correct option

- $(-\infty,+\infty)$
- $(-\infty,0)$
- $[0,+\infty)$
- $(0,+\infty)$

Question # 19 of 30 (Start time: 09:07:26 AM, 26 December 2020)

How many real numbers exist between 1 and 5.

Select the correct option

- 4
- 5
- infinity

SONU

- 0

Click to Save A

Question # 20 of 30 (Start time: 09:07:59 AM, 26 December 2020)

The partial definite integral of the function f(x,y) is evaluated by holding x fixed and integrating with respect to y.

Select the correct option

- (●) True
- ( ) False

SONU

Click to Save Answ

Question # 21 of 30 (Start time: 09:08:38 AM, 26 December 2020)

If $w = f(x, y)$ where $x = g(r, s)$ then $\frac{\partial w}{\partial r} =$

Select the correct option

- $\frac{\partial w}{\partial r} = \frac{dw}{dy}\frac{\partial y}{\partial r} + \frac{dw}{dx}\frac{\partial x}{\partial s}$
- SONU MUGHAL $\frac{\partial w}{\partial r} = \frac{dw}{dx}\frac{\partial x}{\partial r} + \frac{dw}{dy}\frac{\partial y}{\partial r}$
- $\frac{\partial w}{\partial r} = \frac{dw}{ds}\frac{\partial s}{\partial r} + \frac{dw}{dy}\frac{\partial y}{\partial r}$
- $\frac{\partial w}{\partial r} = \frac{dw}{dx}\frac{\partial x}{\partial w} - \frac{dw}{dy}\frac{\partial y}{\partial r}$

Click to Save Answe

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Question # 22 of 30 (Start time: 09:09:21 AM, 26 December 2020)

Value of money is an example of -------- quantity

Select the correct option

- (●) Scalar
- ( ) Vector

SONU MUGHAL

Cli

MTH301:Grand Quiz

Question # 23 of 30 (Start time: 09:09:58 AM, 26 December 2020)

Let $f(x, y)$ be a function with continuous second order partial derivatives in some circle centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0)$ f

Select the correct option

○	$f(x, y)$ has a relative minimum at (x_0, y_0).
○	$f(x, y)$ has a relative maximum at (x_0, y_0).
○	$f(x, y)$ has a saddle point at (x_0, y_0).
●	No conclusion can be drawn.

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Question # 24 of 30 (Start time: 09:11:00 AM, 26 December 2020)

$$x - coordinate\ of\ vertex\ of\ parabola\ y = 3x^2 + 6x + 8\ is$$

Select the correct option

○	1
●	-1 SONU
○	3
○	6

Question # 25 of 30 (Start time: 09:11:33 AM, 26 December 2020)

Total Mar

Which of the following should be the scalar multiple (λ) such that force : $F_1 = 20N$ *and* $F_2 = -60N$ satisfy the relation : $F_1 = \lambda F_2$

Select the correct option

Reload Math Equati

- $\lambda = -3$
- $\lambda = 3$
- SONU $\lambda = -1/3$
- $\lambda = 1/3$

Click to Save Answer & Move to Next Questi

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Question # 26 of 30 (Start time: 09:12:08 AM, 26 December 2020)

The volume of a parallelopiped with dimensions $x,\ y,\ z$ is . . . . . .

Select the correct option

○	$V = x^2\, y^2\, z^2$
○	$V = x + y + z$
○	$V = \sqrt{x\, y\, z}$
●	SONU $V = x\, y\, z$

Question # 27 of 30 (Start time: 09:12:42 AM, 26 December 2020)

$y = \sqrt{9 - x^2}, \ -3 \leqslant x \leqslant 3$, is a _____ form of a curve in the plane.

Select the correct option

○	implicit
●	explicit
○	parametric
○	parametric vector

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Question # 28 of 30 (Start time: 09:13:06 AM, 26 December 2020)

If f (x, y) is continuous on a closed and bounded set R, then f has _____ on R .

Select the correct option

- (a) absolute maximum
- (b) absolute minimum
- (c) relative minimum
- (d) both (a) and (b).

SONU

Click to Save Ans

Question # 29 of 30 (Start time: 09:13:43 AM, 26 December 2020)

For the function $y = f(x)$, the differential dy is equal to $- - - - -$

Select the correct option

○	$f'(x)dy$
○	$f'(x)$
●	$f'(x)dx$ SONU
○	$f'(x)\ x$

Click to Save Answer & Mo

Question # 30 of 30 (Start time: 09:14:23 AM, 26 December 2020)

$$To\ find\ the\ \text{limit}\ of\ f(x,y) = \frac{x^2+y}{x^2}\ at\ (0,0)\ if\ we\ approach\ (0,0)\ through\ the\ line\ x-axis,\ we\ get\ the\ value$$

Select the correct option

Reloa

○	0
●	1 SONU MUGHAL
○	2
○	None of these



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6) MCQs Solved
7) Solved Past and Current paper
8) Solved Graded Activities
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Detailed
Information

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2) DD (Design Document)
3) Test phase
a) Test phase viva (Live Classes for viva preparation)
4) Final Deliverable
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b) Final presentation
c) Final report
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