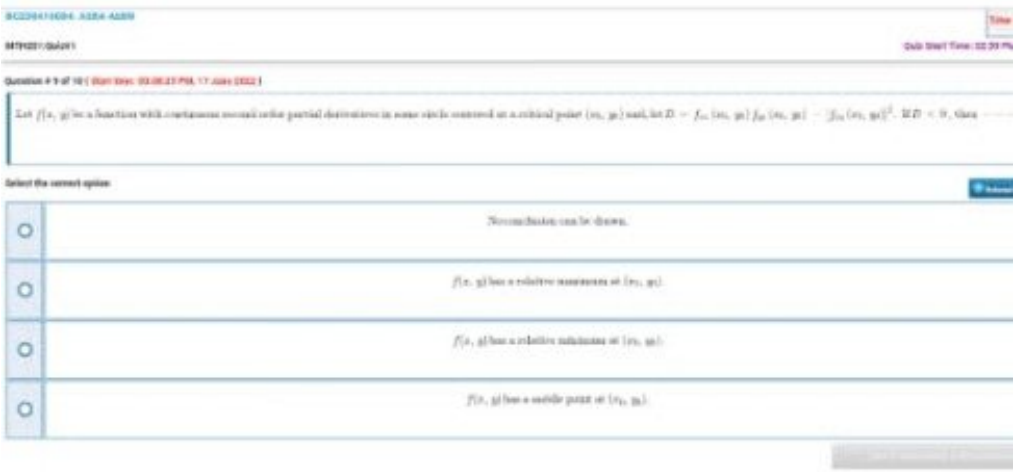
3:08

226 B/s

quiz.vu.edu.pk/QuizQue:

27



Question # 9 of 10 (Start time: 03:08:25 PM, 17 June 2022) Total Mar

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D < 0$, then - - - - - - - -

Select the correct option

Reload Math Equati

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

3:10

189 B/s

quiz.vu.edu.pk/QuizQue:

27

BC200410084: ASRA AMIN

Time Left 63 sec(s)

MTH201:Quiz#1

Quiz Start Time: 02:55 PM, 17 June 2022

Question # 10 of 10 (Start time: 03:10:30 PM, 17 June 2022)

Total Marks: 1

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

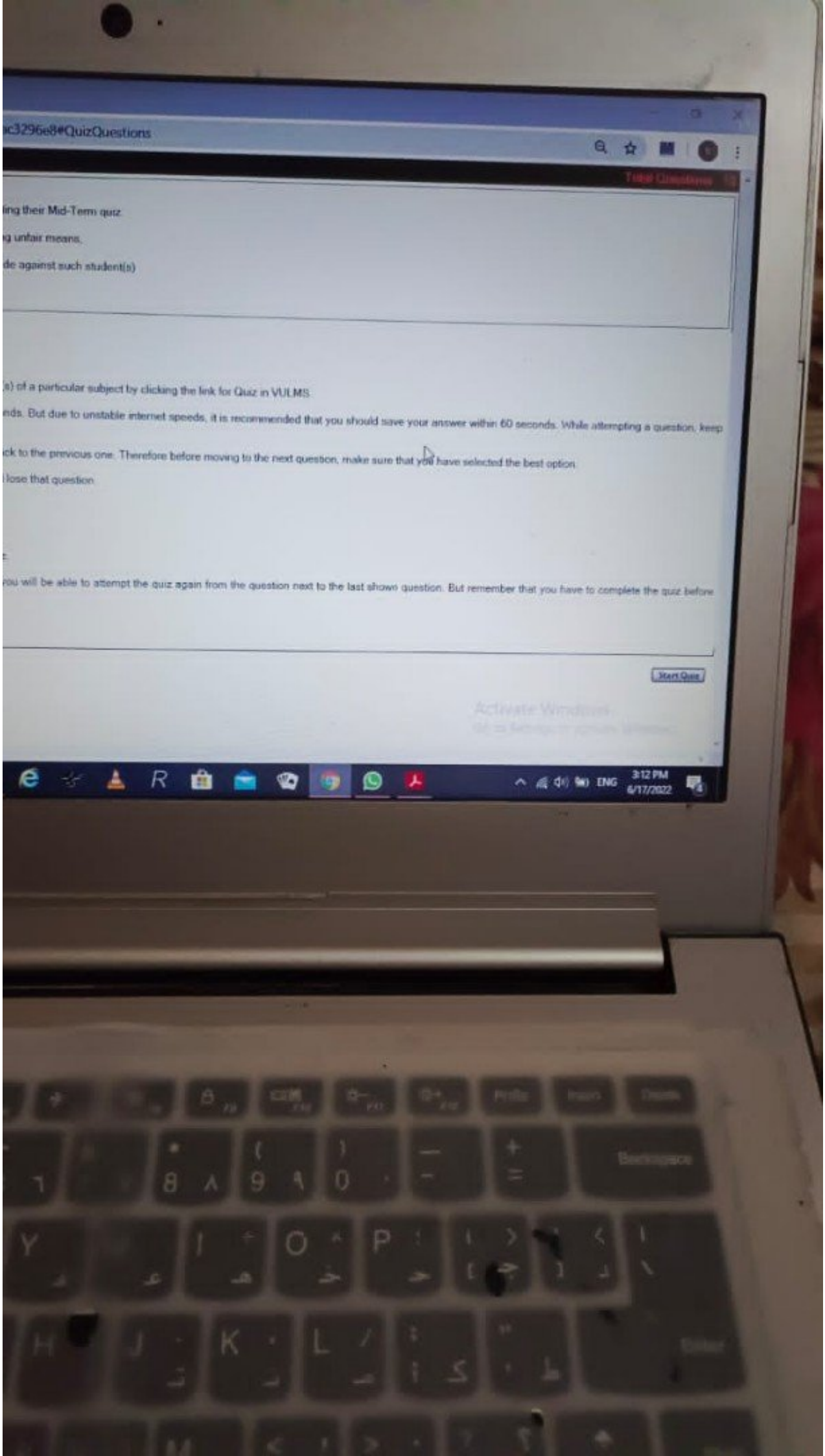
Select the correct option

Reload Math Equations

- ○ explicit
- ● parametric vector
- ○ implicit
- ○ parametric

Click to Save Answer & Move to Next Question

○ ○ ○


c3296e8#QuizQuestions
ing their Mid-Term quiz
g unfair means.
de against such student(s)
s) of a particular subject by clicking the link for Quiz in VULMS
nds. But due to unstable internet speeds, it is recommended that you should save your answer within 60 seconds. While attempting a question, keep
ck to the previous one. Therefore before moving to the next question, make sure that you have selected the best option
lose that question
ou will be able to attempt the quiz again from the question next to the last shown question. But remember that you have to complete the quiz before
Start Quiz
Activate Windows
ENG
3:12 PM
6/17/2022

px?ver=4db16f06-d436-418e-9077-54eff5d4a2d6

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 $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2_{xy}(x_0, y_0)$.

if $D = 0$, then no conclusion can be drawn.

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).

if $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0).

Quiz

estion.aspx?ver=4db16f06-d436-418e-9077-54eff5d4a2d6

Quiz Start

June 2022)

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 $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2_{xy}(x_0, y_0)$.

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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 f has a relative maximum at (x_0, y_0).

Quiz

quiz.vu.edu.pk/QuizQuestion.aspx?ver=d938cc11-86f8-4bc4-ab8a-2253b719302d

0410673: SHAMSA

01:Quiz#1

on # 2 of 10 (Start time: 03:13:24 PM, 17 June 2022)

Quiz Start Time: 03:12 PM, 17 June 2022

Total Marks: 1

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_0) and radius r such that _ _ _ _ _ _ _

the correct option

Reload Math Equations

$f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$

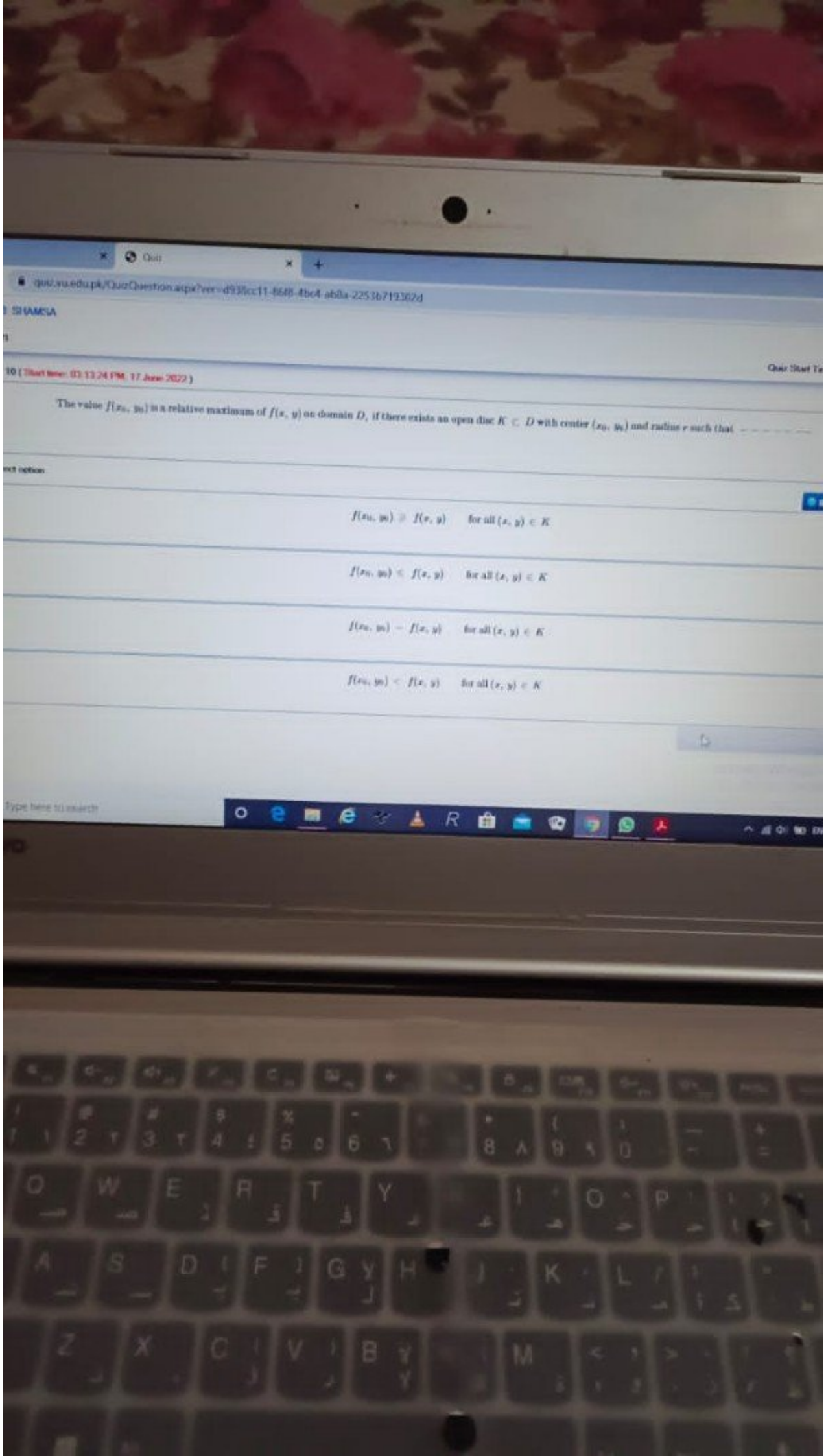
$f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$

Type here to search

ENG


Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=d935cc11-8688-4bc4-ab8a-2253b719302d
SHAMSA
10 (Start time: 03:13:24 PM, 17 June 2022)
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_0) and radius r such that
$f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$
$f(x_0, y_0) \leq f(x, y)$ 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 $(x, y) \in K$
Type here to search

aspx?ver=6d3fbc86-f666-44c4-ab26-cf8760b8d8e6

22)

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 $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2_{xy}(x_0, y_0)$.

if $D < 0$ then f has a saddlepoint at (x_0, y_0).

if $D > 0$ and $f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0).

if $D \neq 0$, then no conclusion can be drawn.

if $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0).

BC200410673: SHAMSA

MTH201:Quiz#1

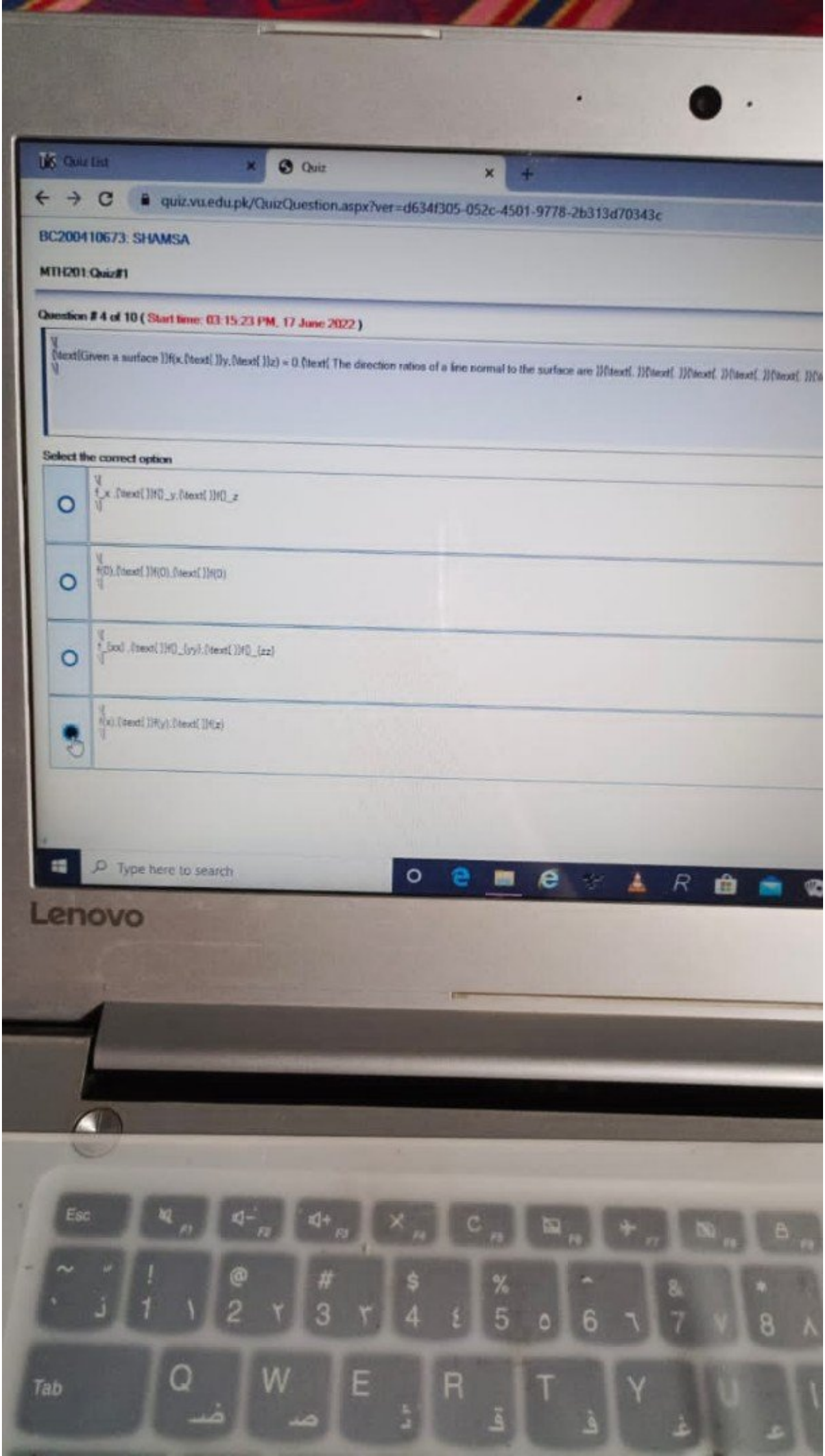
Question # 4 of 10 (Start time: 03:15:23 PM, 17 June 2022)

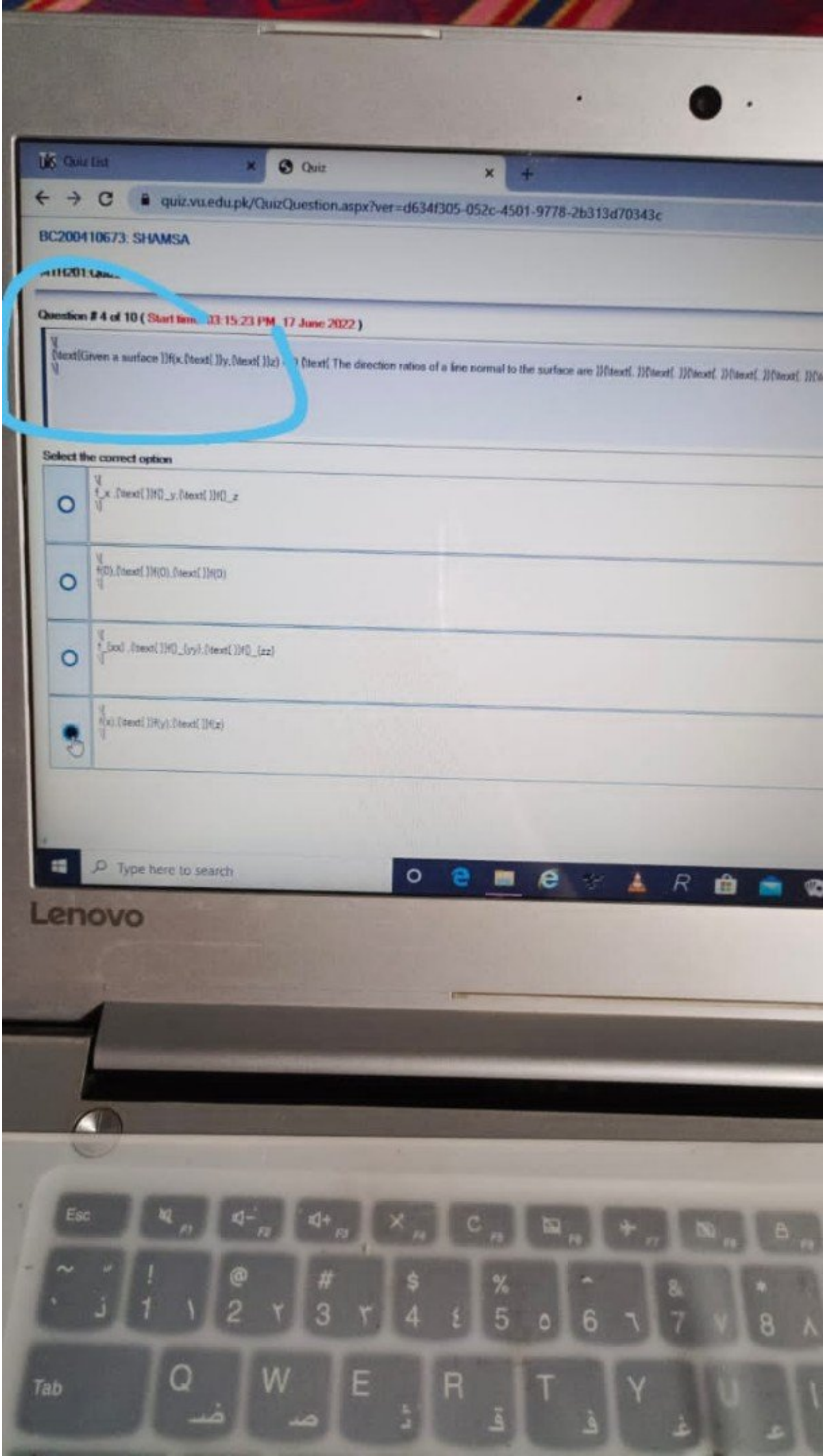
$$
\{\text{Given a surface }\}f(x,\{\text{ }\}y,\{\text{ }\}z) = 0 \{\text{ The direction ratios of a line normal to the surface are }\}\{\text{ }\}\{\text{ }\}\{\text{ }\}\{\text{ }\}\{\text{ }\}\{\text{ }\}
$$

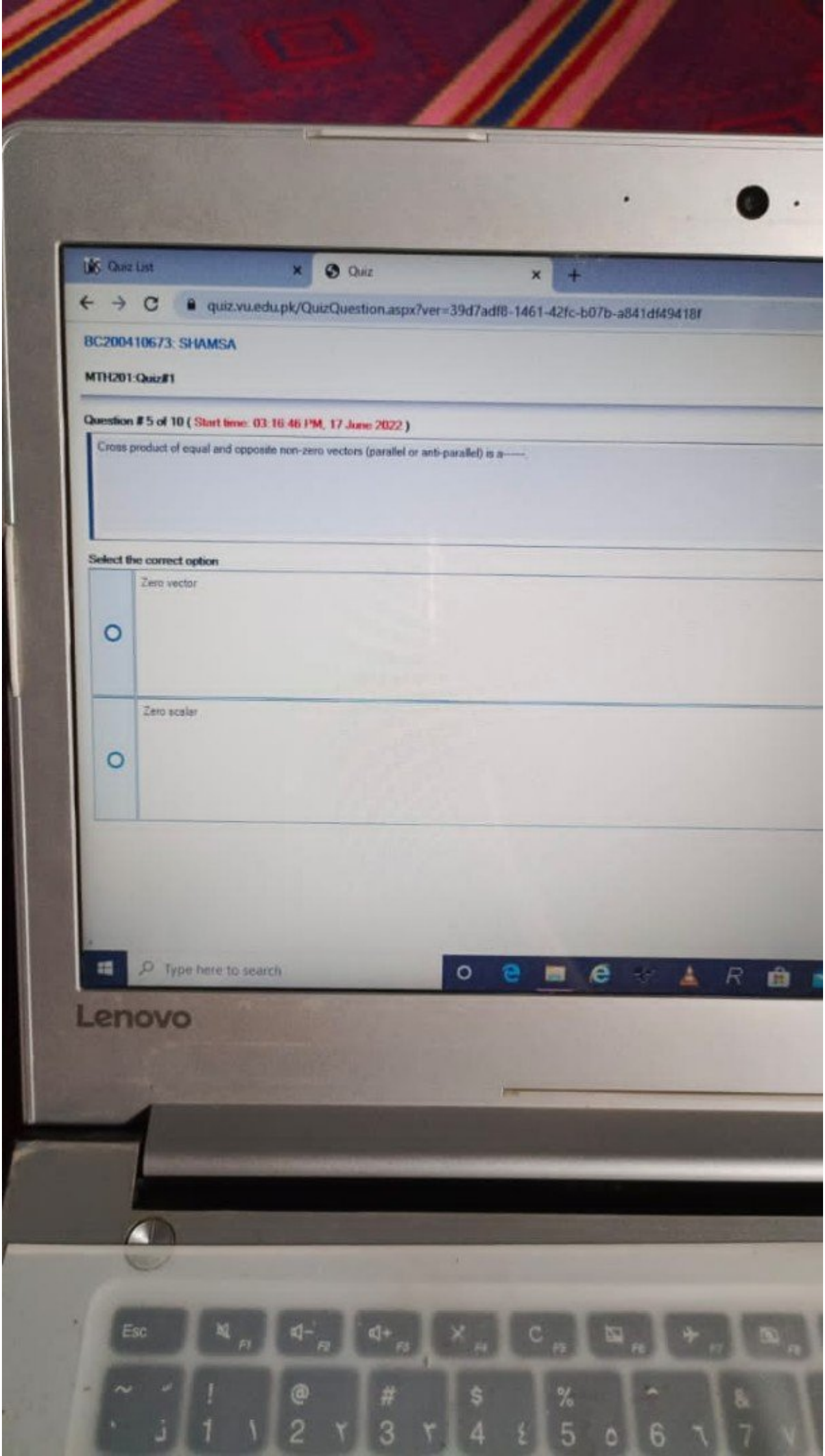
Select the correct option

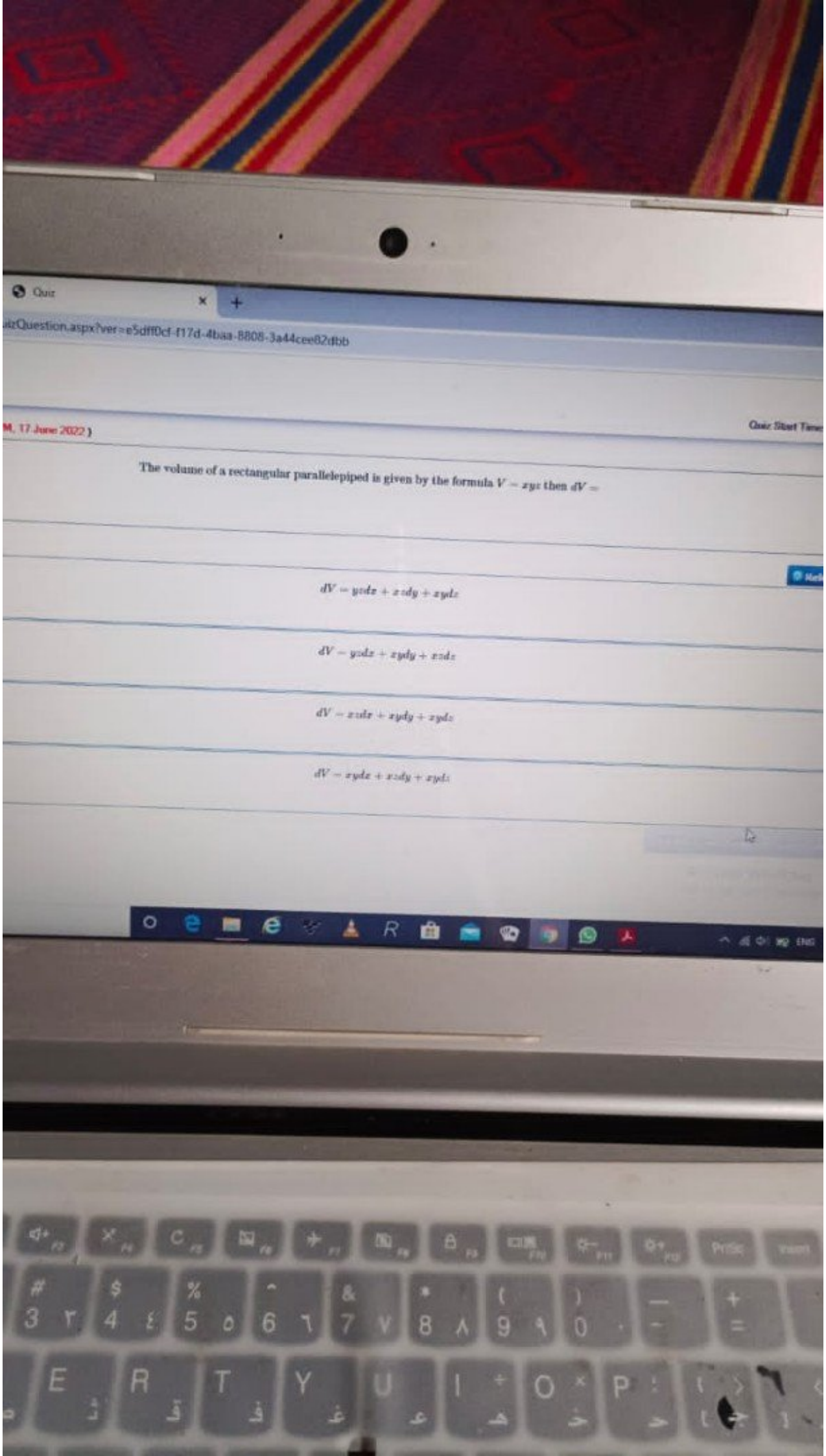
- $f_x .\{\text{ }\}f0_y.\{\text{ }\}f0_z$
- $f(0).\{\text{ }\}f(0).\{\text{ }\}f(0)$
- $f_{oo} .\{\text{ }\}f0_{yy}.\{\text{ }\}f0_{zz}$
- $f(x).\{\text{ }\}f(y).\{\text{ }\}f(z)$

Type here to search


Quiz List
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=d634f305-052c-4501-9778-2b313d70343c
BC200410673: SHAMSA
MTH201:Quiz#1
Question # 4 of 10 (Start time: 03:15:23 PM, 17 June 2022)
Select the correct option
Type here to search
Lenovo


Quiz List
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=d634f305-052c-4501-9778-2b313d70343c
BC200410673: SHAMSA
Question # 4 of 10 (Start time: 03:15:23 PM, 17 June 2022)
Select the correct option
Type here to search
Lenovo


Quiz List
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=39d7adf8-1461-42fc-b07b-a841df49418f
BC200410673: SHAMSA
MTH201:Quiz#1
Question # 5 of 10 (Start time: 03:16:46 PM, 17 June 2022)
Cross product of equal and opposite non-zero vectors (parallel or anti-parallel) is a-----.
Select the correct option
Zero vector
Zero scalar
Type here to search
Lenovo


Quiz
izQuestion.aspx?ver=e5dff0cf-f17d-4baa-8808-3a44cee82dbb
M, 17 June 2022)
Quiz Start Time:
The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$
$dV = yzdx + xzdy + xydz$
$dV = yzdx + xydy + xzdz$
$dV = xzdx + xydy + yzdz$
$dV = xydx + xzdy + yzdz$

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The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

$dV = yzdx + xzdy + xydz$

$dV = yzdx + xydy + xzdz$

$dV = xzdx + xydy + xydz$

$dV = xydx + xzdy + xydz$

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22)

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

$f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) - f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$

ion.aspx?ver=1b7e3360-a695-445e-9168-8dac5c908bca

Quiz St

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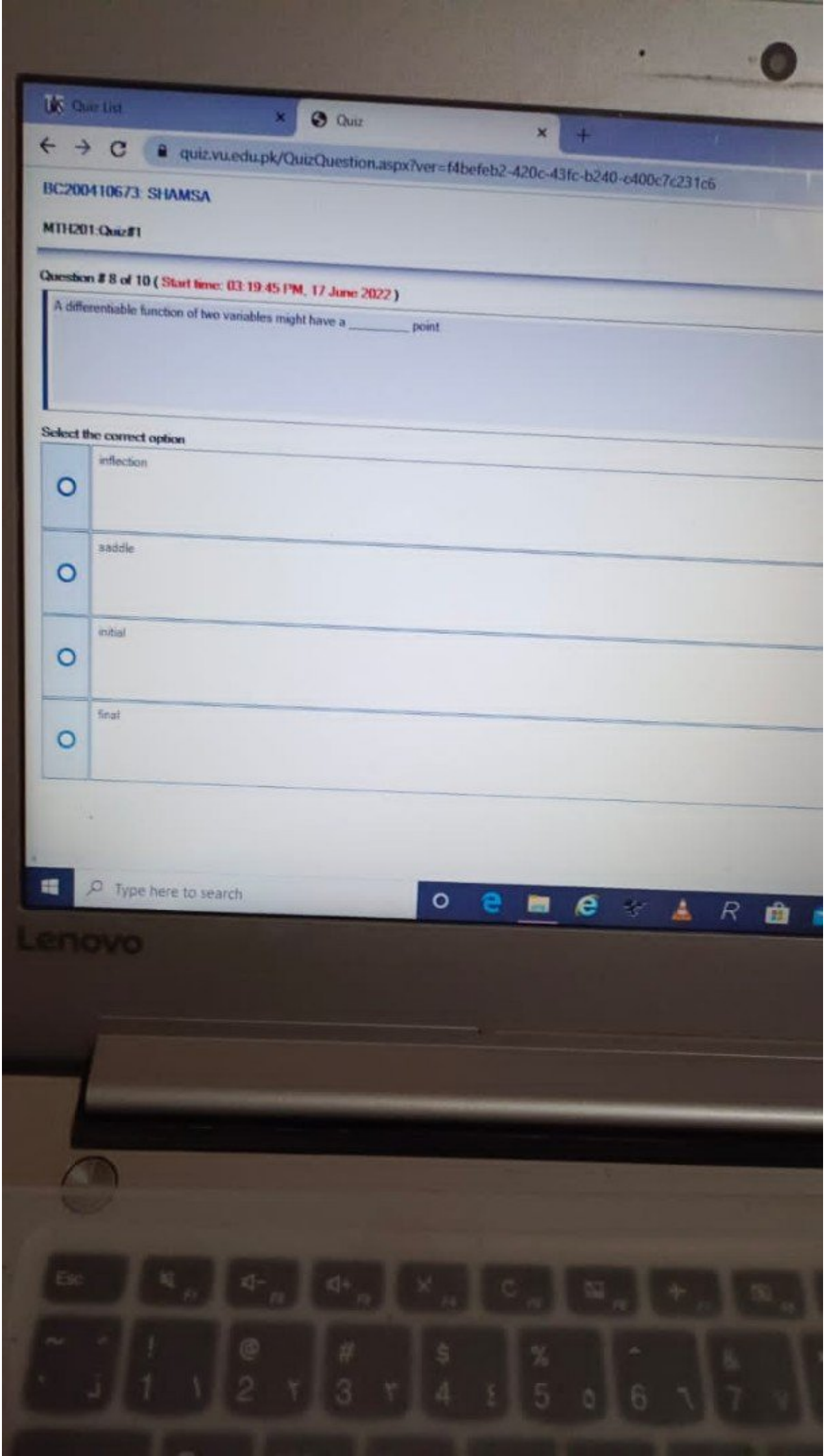
The value $f(x_0, y_0)$ is an absolute maximum of $f(x, y)$ on domain D, if - - - - - - - -

$f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$


Quiz List
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=f4befeb2-420c-43fc-b240-e400c7c231c6
BC200410673 SHAMSA
MTH201 Quiz #1
Question # 8 of 10 (Start time: 03:19:45 PM, 17 June 2022)
A differentiable function of two variables might have a _____ point
Select the correct option
inflection
saddle
initial
final
Type here to search
Lenovo

quiz.vu.edu.pk/QuizQuestion.aspx?ver=f4befeb2-420c-43fc-b240-c400c7c231c6

BC200410673: SHAMSA

MTH201:Quiz#1

Question # 8 of 10 (Start time: 03:19:45 PM, 17 June 2022)

A differentiable function of two variables might have a _____ point.

Select the correct option

- inflection
- saddle
- initial
- final

Type here to search

Lenovo

Quiz List | Quiz

quiz.vu.edu.pk/QuizQuestion.aspx?ver=6eef773c-03a1-4a69-8817-ae8fdb06d914

BC200410673: SHAMSA

MTH201:Quiz#1

Question # 9 of 10 (Start time: 03:20:46 PM, 17 June 2022)

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

Select the correct option

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

Type here to search

Lenovo

Quiz

QuizQuestion.aspx?ver=9d30b1f6-ee99-4074-993f-aad1d3817c43

4 PM, 17 June 2022)

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

implicit

explicit

parametric vector

parametric

4:09 PM 62%

quiz.vu.edu.pk

ECO401:Quiz No.01 Quiz Start Time: 04:

Question # 1 of 10 (Start time: 04:10:34 PM, 17 June 2022)

If the price of a good X is increased by 40% and its quantity demanded falls by 10%, the price elasticity of demand is:

Select the correct option

- Unit elastic.
- Perfectly elastic.
- Inelastic.
- Elastic.

Search...

4:52

quiz.vu.edu.pk/QuizQue

4

BC200404409: FIZZA NASEER

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 2 of 10 (Start time: 04:52:00 PM, 17 June 2022)

Total Marks: 1

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ---------m/s.

Select the correct option

- 12
- 5
- 7
- 1

Click to Save Answer & Move to Next Question

4:51

quiz.vu.edu.pk/QuizQue

BC200404409: FIZZA NASEER

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 1 of 10 (Start time: 04:51:15 PM, 17 June 2022)

Total Marks: 1

The value $f(x_0, y_0)$ is a relative minimum of $f(x, y)$ on domain D, if there exists an open disc $K \subset D$ with center (x_0, y_0) and radius r such that _ _ _ _ _ _ _ _

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ 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 $(x, y) \in K$

4:52

quiz.vu.edu.pk/QuizQue

BC200404409: FIZZA NASEER

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 3 of 10 (Start time: 04:52:33 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point$(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{yy}(0, 2) = 0$and$f_{xy}(0, 2) = 4$ so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

- then f has a relative minimum at$(0, 2)$.
- thenf has a relative maximum at$(0, 2)$.
- then f has a saddlepoint at$(0, 2)$.
- then no conclusion can be drawn.

Click to Save Answer & Move to Next Question

4:53
quiz.vu.edu.pk/QuizQue
4

BC200404409: FIZZA NASEER

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 4 of 10 (Start time: 04:53:16 PM, 17 June 2022)

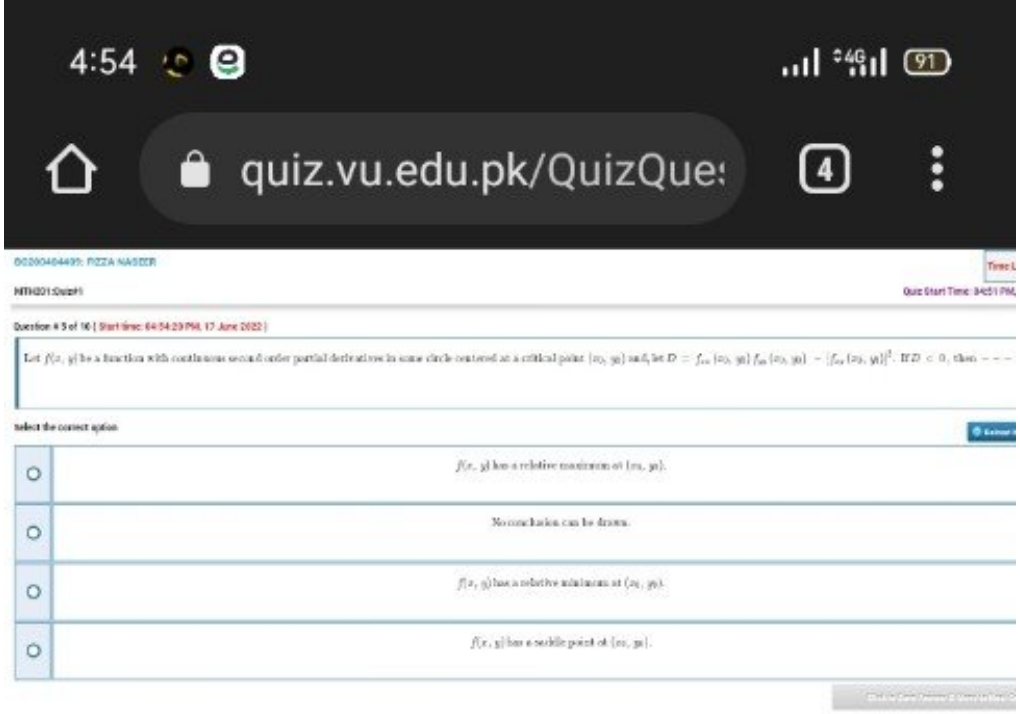
Total Marks: 1

Two vectors of magnitudes [4,5] making an angle of 30degree, then the area of parallelogram associated with these two vectors is --------- square units.

Select the correct option

- 10*Sqrt(2)
- 20*Sqrt(2)
- 10
- 10*Sqrt(3)

Click to Save Answer & Move to Next Question


4:54
91
quiz.vu.edu.pk/QuizQue
4
0030404495: FIZZA NASEER
MTH201:Quiz#1
Quiz Start Time: 04:51 PM
Question # 5 of 10 (Start time: 04:54:23 PM, 17 June 2022)
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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D < 0$, then - - -
Select the correct option
$f(x, y)$ has a relative maximum at (x_0, y_0).
No conclusion can be drawn.
$f(x, y)$ has a relative minimum at (x_0, y_0).
$f(x, y)$ has a saddle point at (x_0, y_0).

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

parametric

explicit

parametric vector

implicit

Click to Save Answer & Move to Next Question

4:55

quiz.vu.edu.pk/QuizQue

BC200404409: FIZZA NASEER

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 6 of 10 (Start time: 04:55:12 PM, 17 June 2022) Total Marks: 1

The gradient of a scalar function ϕ is defined as

Select the correct option

Reload Math Equations

- $grad\phi = \nabla f(x,y)\phi$
- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi = \nabla\phi$
- $grad\phi = -\nabla f(x,y)\phi$

Click to Save Answer & Move to Next Question

The gradient of a scalar function$\phi$is defined as

orrect option

Reload

$grad\phi = -\nabla f(x,y)\phi$

$grad\phi = \nabla\phi$

$grad\phi = -\nabla f(x,y)\phi$

$grad\phi = \nabla f(x,y)\phi$

Click to Save Answer & Move to Next Question

4:55
quiz.vu.edu.pk/QuizQue
4

BC200404409: FIZZA NASEER

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 7 of 10 (Start time: 04:55:46 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- initial point.
- saddle point.
- stationary point.
- extreme point.

Click to Save Answer & Move to Next Question

4:56

quiz.vu.edu.pk/QuizQue:

BC200404409: FIZZA NASEER

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 04:51 PM, 17 June 2022

Question # 8 of 10 (Start time: 04:56:38 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

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

Click to Save Answer & Move to Next Question

4G 5:03 65

Quiz
quiz.vu.edu.pk

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

elect the correct option

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

Click to Save Answer & Move to Next Questio

5:05

Quiz
quiz.vu.edu.pk

Start time: 05:05:50 PM, 17 June 2022)

The del operator is defined as

tion

$$\nabla \equiv \frac{\partial}{\partial x}k + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}i$$

$$\nabla \equiv \frac{\partial}{\partial x}i + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}k$$

$$\nabla \equiv -\frac{\partial}{\partial x}i - \frac{\partial}{\partial y}j - \frac{\partial}{\partial z}k$$

$$\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$$

Click to Save Ans

5:07

Quiz
quiz.vu.edu.pk

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
- Direction perpendicular to
- Arbitrary direction

Click to Save Answer & Move to Next Question

5:09

Quiz
quiz.vu.edu.pk

ime: 05:09:02 PM, 17 June 2022)

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

parametric vector

implicit

parametric

explicit

Click to Save Answer

4G 5:11 63

Quiz
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Question # 7 of 10 (Start time: 05:11:00 PM, 17 June 2022) Total

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

Select the correct option

- initial point.
- saddle point.
- extreme point.
- stationary point.

Click to Save Answer & Move to Next Question

4G 5:12

Quiz
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uestion # 8 of 10 (Start time: 05:12:05 PM, 17 June 2022) Total Ma

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

elect the correct option

- x-axis
- gradient vector
- unit vector
- y-axis

Click to Save Answer & Move to Next Question

4G 5:12 63

Quiz
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Question # 9 of 10 (Start time: 05:12:36 PM, 17 June 2022)

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

Select the correct option

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

Click to Save Answer & Move t

4G 5:14

Quiz
quiz.vu.edu.pk

Question # 10 of 10 (Start time: 05:13:54 PM, 17 June 2022)

A differentiable function of two variables might have a _____ point.

Select the correct option

- initial
- saddle
- final
- inflection

Click to Save Answer & Move to Next Qu

quiz.vu.edu.pk/QuizQuestion.aspx?ver=aa5a1477-3e5c-46d8-ad69-e1b2d8f95b96

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Question # 1 of 10 (Start time: 05:13:03 PM, 17 June 2022)

$$
{\text{Given a surface }}f(x,{\text{ }}y,{\text{ }}z) = 0.{\text{ The direction ratios of a line normal to the surface are }}{\text{ }}{\text{ }}{\text{ }}{\text{ }}{\text{ }}{\text{ }}
$$

Select the correct option

- $$f(x),{\text{ }}f(y),{\text{ }}f(z)$$
- $$f(0),{\text{ }}f(0),{\text{ }}f(0)$$
- $$f_{xx},{\text{ }}f{}_{yy},{\text{ }}f{}_{zz}$$
- $$f_x,{\text{ }}f{}_y,{\text{ }}f{}_z$$

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Question # 1 of 10 (Start time: 05:13:03 PM, 17 June 2022)

$$
\text{Given a surface } f(x,y,z) = 0.\text{ The direction ratios of a line normal to the surface are } f_x, f_y, f_z
$$

Select the correct option

- $$f(x).f(y).f(z)$$
- $$f(0).f(0).f(0)$$
- $$f_{xx}.f_{yy}.f_{zz}$$
- $$f_x.f_y.f_z$$

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Quiz

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Question # 1 of 10 (Start time: 05:13:03 PM, 17 June 2022)

\[
{\text{Given a surface }}f(x,{\text{ }}y,{\text{ }}z) = 0,{\text{ The direction ratios of a line normal to the surface a
\]

Select the correct option

- \[f(x).{\text{ }}f(y).{\text{ }}f(z) \]
- \[f(0).{\text{ }}f(0).{\text{ }}f(0) \]
- \[f_{xx}.{\text{ }}f{}_{yy}.{\text{ }}f{}_{zz} \]
- \[f_x.{\text{ }}f{}_y.{\text{ }}f{}_z \]

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Quiz

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

Select the correct option

- initial point.
- extreme point.
- stationary point.
- saddle point.

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Question # 3 of 10 (Start time: 05:16:13 PM, 17 June 2022)

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

Select the correct option

- vector
- scalar
- continuous
- discontinuous

MTH201:Quiz#1

Quiz Start Time: 10:50 AM, 15 June 2022

Question # 2 of 10 (Start time: 10:51:53 AM, 15 June 2022)

Total Marks: 1

The function increases most rapidly when $\cos\theta = 1$ in the direction of

Select the correct option

Reload Math Equations

- $D_u f = |\nabla f| \cos \pi$
- $D_u f = |\nabla f| \cos \frac{\pi}{2}$
- $D_u f = |\nabla f| \cos 1$
- $D_u f = |\nabla f| \cos 0$

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gradient of a scalar function alp...
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For the function $z = f(x, y)$, the total differential dz is equal to ------

$f_x(x)dx + f_y(x)dy$

$f_x(x)dy - f_y(x)dx$

$f_x(x)dx - f_y(x)dy$

$f_x(x)dy + f_y(x)dx$

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The function decreases most rapidly in the direction of

$|\nabla f|$

$-\nabla f \times \hat{u}$

$-\nabla f$

$-|\nabla f|$

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the function decreases most rap
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17 June 2022)

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

$y = mx + c$

$y - y_0 = m(x - x_0)$

$y + y_0 = m(x + x_0)$

$y = mx, c$

2. The function f decreases most rapidly when $\cos\theta = -1$ or $\theta = \pi$ or when it

the opposite direction of $\bar{\nabla} f$. That is, at each point P in its domain, f decreases m

rapidly in the direction of gradient vector $-\bar{\nabla} f$ at P. The derivative in this direction

$$D_u f = \bar{\nabla} f \cdot \hat{u} = \left|\bar{\nabla} f\right| \cos\pi = -\left|\bar{\nabla} f\right|$$

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The function f decreases most rapidly when $\cos\theta = -1$ or $\theta = \pi$ or when $\hat{u}$ is the opposite direction of $\bar{\nabla}f$. That is, at each point P in its domain, f decreases most rapidly in the direction of gradient vector $-\bar{\nabla}f$ at P. The derivative in this direction

$$D_{\hat{u}} f = \bar{\nabla}f \cdot \hat{u} = \left|\bar{\nabla}f\right| \cos\pi = -\left|\bar{\nabla}f\right|$$

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centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D = 0$, then - - -

Reload Math E

$f(x, y)$ has a relative minimum at (x_0, y_0).

No conclusion can be drawn.

$f(x, y)$ has a relative maximum at (x_0, y_0).

$f(x, y)$ has a saddle point at (x_0, y_0).

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Question # 7 of 10 (Start time: 05:21:53 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}$

Select the correct option

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

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PM, 17 June 2022)

Total Marks: 1

utinuous second order partial derivatives in some circle centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D = 0$, then - - - - - - - - -

Reload Math Equations

$f(x, y)$ has a relative minimum at (x_0, y_0).

No conclusion can be drawn.

$f(x, y)$ has a relative maximum at (x_0, y_0).

$f(x, y)$ has a saddle point at (x_0, y_0).

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Quiz List | Quiz | (3) WhatsApp

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Question # 8 of 10 (Start time: 05:22:59 PM, 17 June 2022)

If a vector of magnitude '4' is making angle 30-degree with Y-axis then its component vector along x-axis is ———

Select the correct option

- 2*sqrt(3)
- -2*sqrt(3)
- 2
- -2

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MTH201:Quiz#1

Quiz Start Time: 05:23 PM, 17 June 2022

Question # 1 of 10 (Start time: 05:23:18 PM, 17 June 2022)

Total Marks: 1

The volume of the papallelepiped with sides a, b and c is determined as

Select the correct option

Reload Math Equations

- $\left|a.b\right| . \left|c\right| \cos\theta$
- $\left|a.b\right| \times \left|c\right| \sin\theta$
- $\left|a \times b\right| \times \left|c\right| \cos\theta$
- $\left|a \times b\right| . \left|c\right| \cos\theta$

Click to Save Answer & Move to Next Question

Question # 2 of 10 (Start time: 05:24:39 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$

Click to Save Answer & Move to Next Question

Quiz List | Quiz | (2) WhatsApp

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Question # 9 of 10 (Start time: 05:25:15 PM, 17 June 2022)

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ——

Select the correct option

- 12
- 5
- 1
- 7

Question # 9 of 10 (Start time: 05:25:15 PM, 17 June 2022)

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ---------m/s

Select the correct option

- 12
- 5
- 1
- 7

Question # 3 of 10 (Start time: 05:25:43 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

Reload Math Equations

- explicit
- parametric vector
- implicit
- parametric

Click to Save Answer & Move to Next Question

Question # 4 of 10 (Start time: 05:26:35 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question

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$x, y)$ on domain D, if there exists an open disc $K \subset D$ with center (x_0, y_0) and radius

$f(x_0, y_0) \geqslant f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) \leqslant f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$

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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_0) and radius r such that _____

rrect option

Reload Ma

$f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$

$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$

Question # 5 of 10 (Start time: 05:27:17 PM, 17 June 2022) Total Marks: 1

A discontinuous function on a closed and bounded set need not have any _____.

Select the correct option

- relative extrema
- absolute extrema

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Question # 10 of 10 (Start time: 05:26:47 PM, 17 June 2022)

Total Marks:

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_0) and radius r such that _ _ _ _ _ _ _ _

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$

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Question # 6 of 10 (Start time: 05:27:57 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D < 0$, then - - -

Select the correct option

Reload

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

Click to Save Answer & Move to Next Q

Question # 7 of 10 (Start time: 05:28:54 PM, 17 June 2022) Total Marks: 1

The del operator is defined as

Select the correct option

Reload Math Equations

- $\nabla \equiv \frac{\partial}{\partial x} i + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} k$
- $\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$
- $\nabla \equiv \frac{\partial}{\partial x} k + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} i$
- $\nabla \equiv -\frac{\partial}{\partial x} i - \frac{\partial}{\partial y} j - \frac{\partial}{\partial z} k$

Click to Save Answer & Move to Next Question

Question # 6 of 10 (Start time: 05:30:12 PM, 17 June 2022) Total Mar

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 $D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then - - - - - - -

Select the correct option

Reload Math Equati

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

Question # 9 of 10 (Start time: 05:31:15 PM, 17 June 2022) Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

- final
- saddle
- initial
- inflection

Click to Save Answer & Move to Next Question

Question # 10 of 10 (Start time: 05:32:06 PM, 17 June 2022) Total Marks: 1

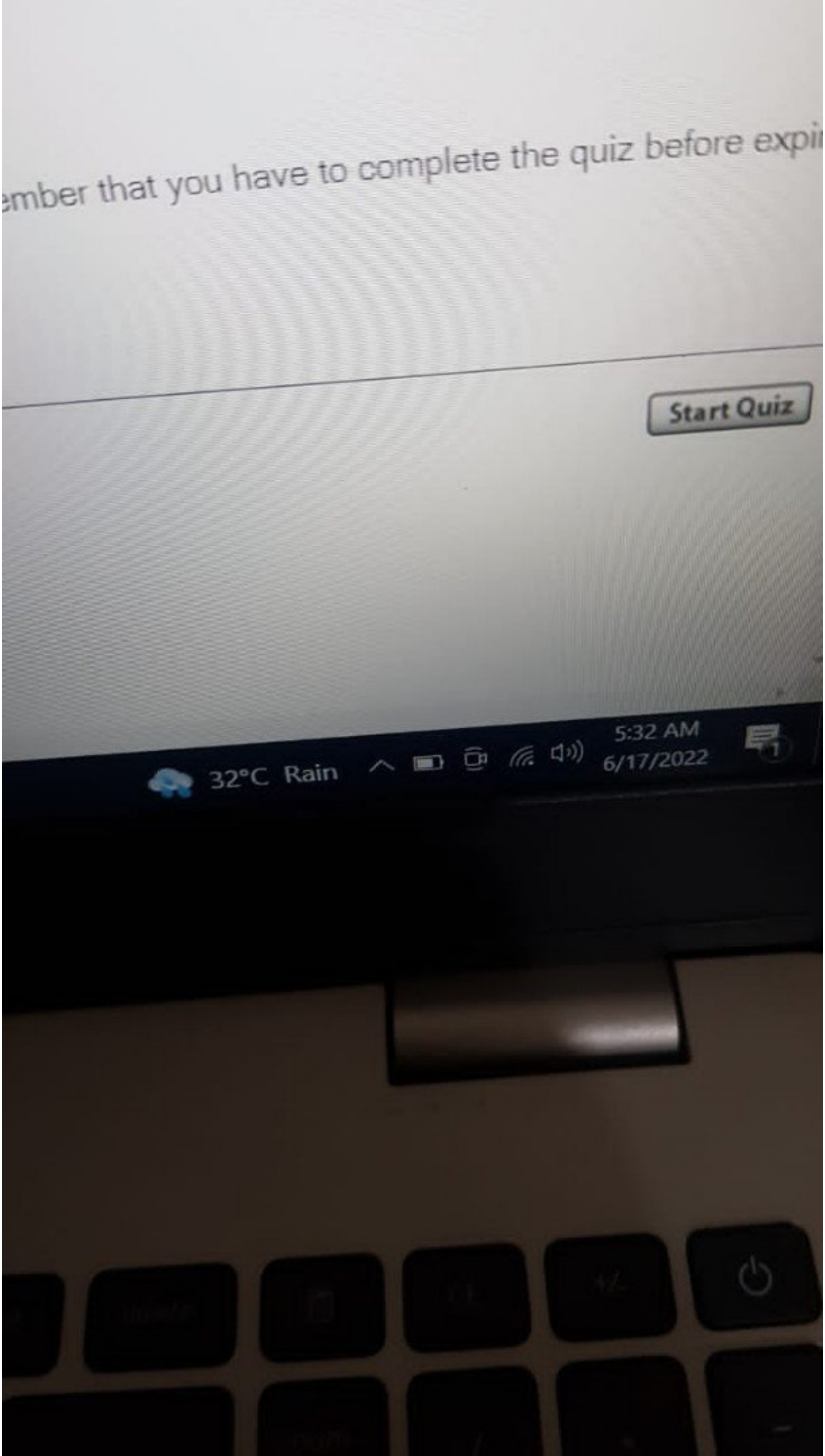
Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{yy}(0, 2) = 0$ and $f_{xy}(0, 2) = 4$ so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

○	then no conclusion can be drawn.
○	thenf has a relative maximum at $(0, 2)$.
○	then f has a saddlepoint at $(0, 2)$.
○	then f has a relative minimum at $(0, 2)$.

Click to Save Answer & Move to Next Question


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6/17/2022

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

parametric

parametric vector

explicit

implicit

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

$D_u f = |\nabla f| \cos 1$

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

$D_u f = |\nabla f| \cos 0$

$D_u f = |\nabla f| \cos \pi$

MTH201:Quiz#1

Quiz Start Time: 05:34 PM, 17 June 2022

Question # 1 of 10 (Start time: 05:34:43 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question

Question # 3 of 10 (Start time: 05:35:04 PM, 17 June 2022)

$$
\text{Given a surface } f(x,\text{ }y,\text{ }z) = 0.\text{ The direction ratios of a line normal to the surface are }\text{ }\text{ }\text{ }\text{ }\text{ }\text{ }
$$

Select the correct option

- $$f_{xx},\text{ }f_{yy},\text{ }f_{zz}$$
- $$f_x,\text{ }f_y,\text{ }f_z$$
- $$f(0),\text{ }f(0),\text{ }f(0)$$
- $$f(x),\text{ }f(y),\text{ }f(z)$$

5:35 4G 0.83 KB/S 88

of 10 (Start time: 05:35:01 PM, 17 June 2022)

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -1$ and $f_{xy}(0, 2) = 0$ so $D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2_{xy}(0, 2) = 2$

rrect option

Reload

then no conclusion can be drawn.

thenf has a relative maximum at $(0, 2)$.

then f has a saddlepoint at $(0, 2)$.

then f has a relative minimum at $(0, 2)$.

Click to Save Answer & Move to Next

Question # 2 of 10 (Start time: 05:35:30 PM, 17 June 2022) Total Marks: 1

The gradient of a scalar function$\phi$is defined as

Select the correct option

Reload Math Equations

- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi = \nabla\phi$
- $grad\phi = \nabla f(x,y)\phi$
- $grad\phi = -\nabla f(x,y)\phi$

Click to Save Answer & Move to Next Question

Question # 3 of 10 (Start time: 05:35:04 PM, 17 June 2022)

$$
\text{Given a surface } f(x,\text{ }y,\text{ }z) = 0 \text{ The direction ratios of a line normal to the surface are } \text{ } \text{ } \text{ } \text{ } \text{ } \text{ }
$$

Select the correct option

- $$
  f_{xx} ,\text{ }f_{yy},\text{ }f_{zz}
  $$
- $$
  f_x ,\text{ }f_y,\text{ }f_z
  $$
- $$
  f(0),\text{ }f(0),\text{ }f(0)
  $$
- $$
  f(x),\text{ }f(y),\text{ }f(z)
  $$

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Select the correct option

○	\[f_{xx} ,{\text{ }}f{}_{yy},{\text{ }}f{}_{zz} \]
○	\[f_x ,{\text{ }}f{}_y,{\text{ }}f{}_z \]
○	\[f(0),{\text{ }}f(0),{\text{ }}f(0) \]
●	\[f(x),{\text{ }}f(y),{\text{ }}f(z) \]

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Question # 4 of 10 (Start time: 05:36:34 PM, 17 June 2022)

A _____ need not be the highest point on the entire graph.

Select the correct option

- absolute maximum
- relative minimum
- absolute minimum
- relative maximum

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estion # 2 of 10 (Start time: 05:36:21 PM, 17 June 2022) T

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

ect the correct option

- y-axis
- gradient vector
- x-axis
- unit vector

Click to Save Answer & Move to Next Que

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

$f_x(x)dy + f_y(x)dx$

$f_x(x)dx + f_y(x)dy$

$f_x(x)dx - f_y(x)dy$

$f_x(x)dy - f_y(x)dx$

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

Select the correct option

- saddle point.
- initial point.
- extreme point.
- stationary point.

Type here to search

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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_0) and radius r such that

ect the correct option

Reload

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

Click to Save Answer & Move to Next

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 Math Equations

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

Click to Save Answer & Move to Next Question

The del operator is defined as

$$\nabla \equiv \frac{\partial}{\partial x} i + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} k$$

$$\nabla \equiv \frac{\partial}{\partial x} k + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} i$$

$$\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$$

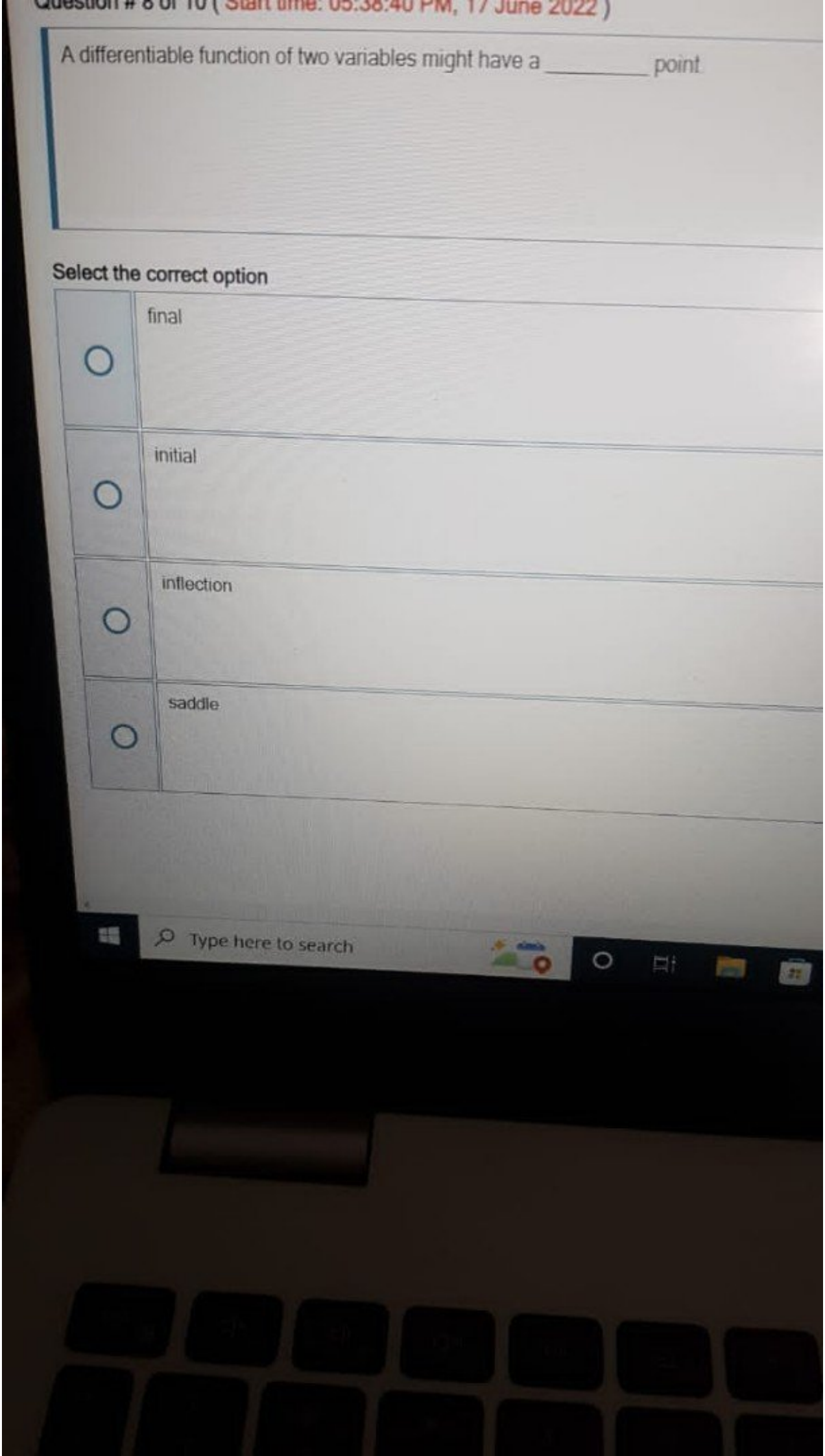
$$\nabla \equiv -\frac{\partial}{\partial x} i - \frac{\partial}{\partial y} j - \frac{\partial}{\partial z} k$$

Question # 8 of 10 (Start time: 05:38:40 PM, 17 June 2022)

A differentiable function of two variables might have a _____ point

Select the correct option

- final
- initial
- inflection
- saddle



If $f(x,y,z) = \frac{1}{2}x^4y^{-2} - z$ then f_x, f_y and f_z are

$f_x = 4x^3y^{-2}$, $f_y = -x^4y^{-3}$ and $f_z = -1$

$f_x = 4x^3y^{-2}$, $f_y = -2x^4y^{-3}$ and $f_z = -1$

$f_x = 2x^3y^{-2}$, $f_y = -x^4y^{-3}$ and $f_z = -1$

$f_x = 2x^3y^{-2}$, $f_y = x^4y^{-3}$ and $f_z = -1$

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Let f be a function of two variables at a critical point$(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{yy}(0, 2) = 0$and$f_{xy}(0, 2) = 4$ so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

t the correct option

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- then no conclusion can be drawn.
- then f has a relative minimum at$(0, 2)$.
- thenf has a relative maximum at$(0, 2)$.
- then f has a saddlepoint at$(0, 2)$.

Click to Save Answer & Move to Next Ques

Question # 5 of 10 (Start time: 05:39:36 PM, 17 June 2022) Total Marks: 1

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

Reload Math Equations

- 0
- 2
- 1
- -1

Click to Save Answer & Move to Next Question

The function decreases most rapidly in the direction of

$-\nabla f \times \hat{u}$

$|\nabla f|$

$-|\nabla f|$

$-\nabla f$

5:40 4G 0.14 KB/S

87

MTH201:Quiz#1

Quiz Start Time: 05:35 PM, 1

Question # 5 of 10 (Start time: 05:39:58 PM, 17 June 2022)

T

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then - - - -

Select the correct option

Reload Ma

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

Click to Save Answer & Move to Next Qu

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_0) and radius r such that - - - - - - - -

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \geq f(x, y)$ 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 $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$

Click to Save Answer & Move to Next Question

Question # 7 of 10 (Start time: 05:41:11 PM, 17 June 2022) Total Marks: 1

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

Reload Math Equations

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

Click to Save Answer & Move to Next Question

5:41 0.48 KB/S 87

quiz.vu.edu.pk/QuizQue:

Question # 6 of 10 (Start time: 05:41:40 PM, 17 June 2022) T

A differentiable function of two variables might have a _____ point.

Select the correct option

- saddle
- inflection
- final
- initial

Click to Save Answer & Move to Next Que

Question # 8 of 10 (Start time: 05:42:19 PM, 17 June 2022) Total Marks: 1

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
- 5
- 1
- 7

Click to Save Answer & Move to Next Question

Question # 9 of 10 (Start time: 05:42:53 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

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

Click to Save Answer & Move to Next Question

5:42 4G 2.00 KB/S 87

quiz.vu.edu.pk/QuizQue:

Let f be a function of two variables at a critical point$(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -2$and$f_{xy}(0, 2) = -2$ so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 0$

rrect option

Reload Math Equ

thenf has a relative maximum at$(0, 2)$.

then f has a saddlepoint at$(0, 2)$.

then no conclusion can be drawn.

then f has a relative minimum at$(0, 2)$.

Click to Save Answer & Move to Next Question

Question # 10 of 10 (Start time: 05:43:35 PM, 17 June 2022) Total Marks: 1

$\vec{r}(t) = 3\cos t\,\hat{i} + 3\sin t\,\hat{j},\ 0 \leqslant t \leqslant \pi$, is a _____ form of a curve in the plane.

Select the correct option

Reload Math Equations

- implicit
- parametric vector
- parametric
- explicit

Click to Save Answer & Move to Next Question

5:44 0.71 KB/S 86

quiz.vu.edu.pk/QuizQue:

MTH201:Quiz#1 Quiz Start Ti

Question # 8 of 10 (Start time: 05:43:55 PM, 17 June 2022)

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

- 1
- 0
- 2
- -1

Click to Save Answer &

5:45 4G 0.30 KB/S 86

quiz.vu.edu.pk/QuizQue:

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

lect the correct option

Relo

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

Click to Save Answer & Move to Nex

5:46 4G 24.0 KB/S 86

quiz.vu.edu.pk/QuizQue:

tion # 10 of 10 (Start time: 05:46:51 PM, 17 June 2022)

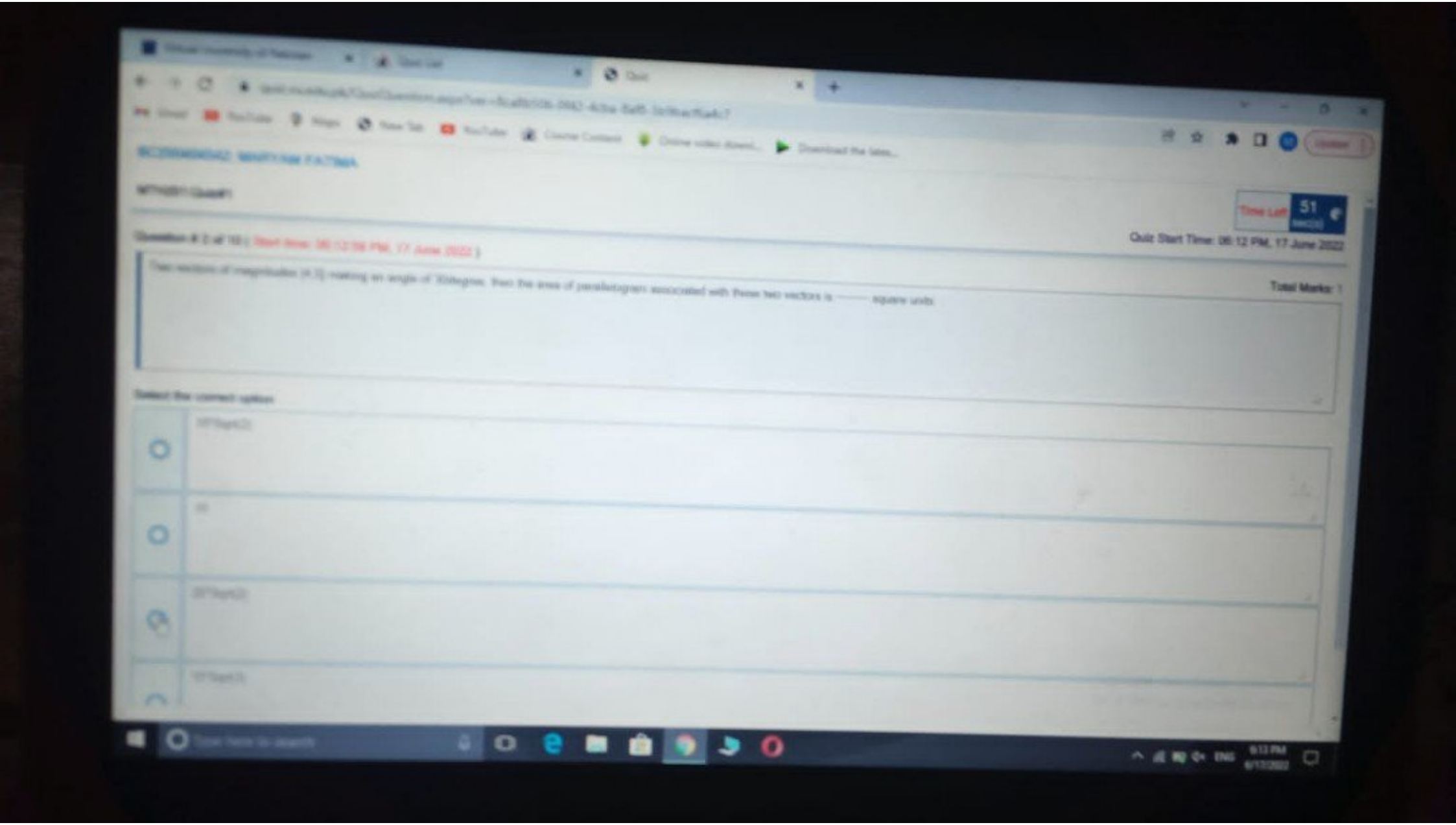
$f(x_0, y_0)$ is an absolute minimum of $f(x, y)$ on domain D, if - - - - - - - - - -

t the correct option

Reload

- $f(x_0, y_0) \geqslant f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) = f(x, y)$ 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 $(x, y) \in D$

Click to Save Answer & Move to Next Q



7:15

quiz.vu.edu.pk/Qui

40

BC200412126 MARYAM NAYAB

Time Left 77 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:15 PM, 17 June 2

Question # 1 of 10 (Start time: 07:15:13 PM, 17 June 2022)

Total Mark

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ---------m/s.

Select the correct option

- 1
- 7
- 5
- 12

Save & Save Answered & Move to Next Question

7:15 PM ··· 4G 53

quiz.vu.edu.pk/QuizQu

Question # 1 of 10 (Start time: 07:15:47 PM, 17 June 2022) Total Ma

$\vec{r}(t) = 3\cos t\,\vec{i} + 3\sin t\,\vec{j},\ 0 \leq t \leq \pi$, is a _____ form of a curve in the plane.

Select the correct option

Reload Math Equa

- parametric
- explicit
- parametric vector
- implicit

Click to Save Answer & Move to Next Question

7:17 PM ··· 4G 52
quiz.vu.edu.pk/QuizQu

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

rrect option

Reload Math Equations

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

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

$\left|\vec{a} \times \vec{b}\right| \times \left|\vec{c}\right| \cos\theta$

$\left|\vec{a} . \vec{b}\right| . \left|\vec{c}\right| \cos\theta$

Click to Save Answer & Move to Next Question

7:17

quiz.vu.edu.pk/Qui

40

BC200412126: MARYAM NAYAB

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:15 PM, 17 June 2022

Question # 2 of 10 (Start time: 07:17:03 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- explicit
- implicit
- parametric
- parametric vector

7:18 PM ··· 4G 52
quiz.vu.edu.pk/QuizQu

MTH201:Quiz#1 Quiz Start Time: 07:15 PM, 17 June 202

Question # 3 of 10 (Start time: 07:18:02 PM, 17 June 2022) Total Marks:

A _____ need not be the highest point on the entire graph.

Select the correct option

- absolute minimum
- relative minimum
- relative maximum
- absolute maximum

7:18

29.7 K/s

quiz.vu.edu.pk/Qui

40

BC200412135: MARYAM NAYAB

Time Left 0:0

MTH201 Quiz#1

Quiz Start Time: 07:15 PM, 17 June 2022

Question # 3 of 10 (Start time: 07:18:47 PM, 17 June 2022)

Total Marks: 1

The value $f(x_0, y_0)$ is a relative minimum of $f(x, y)$ on domain D, if there exists an open disc $K \subset D$ with center (x_0, y_0) and radius r such that ---------- .

Select the correct option

- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \geq f(x, y)$ 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 $(x, y) \in K$

7:18 PM ··· 4G 52
quiz.vu.edu.pk/QuizQu 1

Question # 4 of 10 (Start time: 07:18:44 PM, 17 June 2022) Total Mark:

A discontinuous function on a closed and bounded set need not have any _____.

Select the correct option

- absolute extrema
- relative extrema

LMS LMS

7:20 PM ··· 4G 51
quiz.vu.edu.pk/QuizQu

Question # 5 of 10 (Start time: 07:19:56 PM, 17 June 2022) Total

Two vectors of magnitudes [4,5] making an angle of 30degree then the area of parallelogram associated with these two vectors is --------- square units.

Select the correct option

- 10
- 10*Sqrt(2)
- 20*Sqrt(2)
- 10*Sqrt(3)

7:20

quiz.vu.edu.pk/Qui

40

BC200412126: MARYAM NAYAB

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:15 PM, 17 June 2022

Question # 4 of 10 (Start time: 07:20:34 PM, 17 June 2022)

Total Marks: 1

The function increases most rapidly when $\cos\theta = 1$ in the direction of

Select the correct option

Reload Math Equations

- $D_u f = |\nabla f| \cos\frac{\pi}{2}$
- $D_u f = |\nabla f| \cos 1$
- $D_u f = |\nabla f| \cos 0$
- $D_u f = |\nabla f| \cos\pi$

7:21 PM
quiz.vu.edu.pk/QuizQu

1:Quiz#1 Quiz Start Time: 07:15 PM, 17 June 2022

n # 6 of 10 (Start time: 07:20:55 PM, 17 June 2022) Total Marks: 1

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

he correct option

Reload Math Equations

- parametric vector
- explicit
- parametric
- implicit

Question # 5 of 10 (Start time: 07:21:29 PM, 17 June 2022)

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

Select the correct option

Reload

- $\nabla f(x, y) \times \hat{u}$
- $\nabla f(x, y) . \hat{u}$
- $\nabla f(x, y) . u$
- $\hat{u} \times \nabla f(x, y)$

7:21 PM
quiz.vu.edu.pk/QuizQu

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{xy}(0, 2) = 0$ and $f_{xy}(0, 2) = 4$
so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

correct option

Reload Math Equatio

then no conclusion can be drawn.

then f has a saddlepoint at $(0, 2)$.

thenf has a relative maximum at $(0, 2)$.

then f has a relative minimum at $(0, 2)$.

Click to Save Answer & Move to Next Question

7:23

quiz.vu.edu.pk/Qui:

40

MTH201:Quiz#1 Quiz Start Tim

Question # 7 of 10 (Start time: 07:23:05 PM, 17 June 2022)

The function decreases most rapidly in the direction of

Select the correct option

- $-\nabla f$
- $-\nabla f \times \hat{u}$
- $-|\nabla f|$
- $|\nabla f|$

7:23 PM ··· 4G 51
quiz.vu.edu.pk/QuizQu

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

e correct option

Reload Math Equat

$f_x(x_0, y_0) = 0,\ f_y(x_0, y_0) = 0$

Options

$f_x(x_0, y_0) > 0,\ f_y(x_0, y_0) > 0$

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

$f_x(x_0, y_0) < 0,\ f_y(x_0, y_0) < 0$

Click to Save Answer & Move to Next Question

7:24

quiz.vu.edu.pk/Qui

40

MTH201:Quiz#1

Quiz Start Time: 07:15 PM, 17 June 202

Question # 8 of 10 (Start time: 07:23:54 PM, 17 June 2022)

Total Marks:

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

Select the correct option

- vector
- continuous
- scalar
- discontinuous

7:24 PM ··· 4G 51
quiz.vu.edu.pk/QuizQu

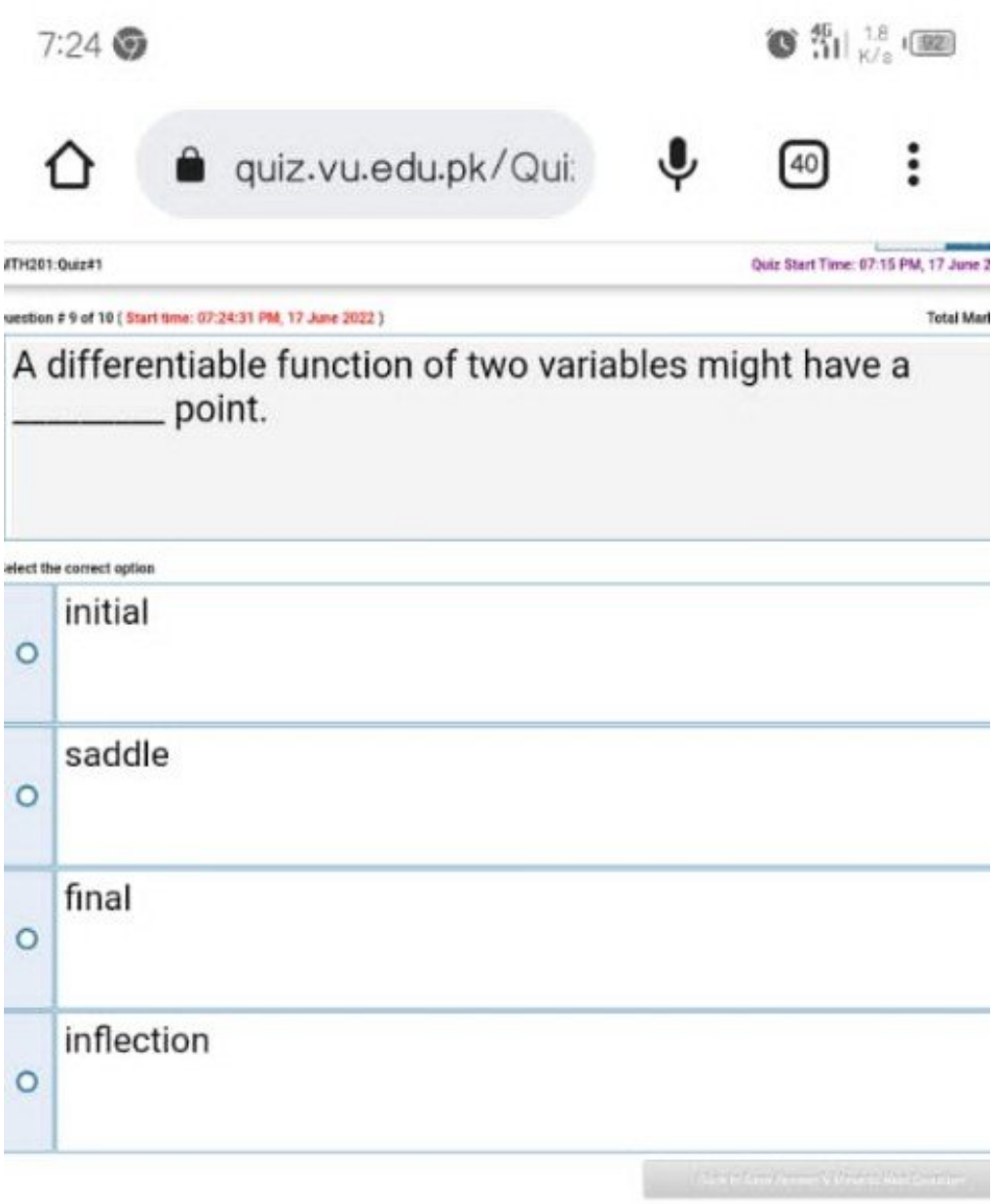
$y = \sqrt{9 - x^2}, \ -3 \leq x \leq 3$, is a _____ form of a curve in the plane.

ect the correct option

Reload Math Equations

- parametric
- parametric vector
- explicit
- implicit

Click to Save Answer & Move to Next Question


7:24
quiz.vu.edu.pk/Qui
40
TH201:Quiz#1
Quiz Start Time: 07:15 PM, 17 June 2
uestion # 9 of 10 (Start time: 07:24:31 PM, 17 June 2022)
Total Mar
A differentiable function of two variables might have a _____ point.
elect the correct option
initial
saddle
final
inflection

7:25 PM
quiz.vu.edu.pk/QuizQu

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

correct option

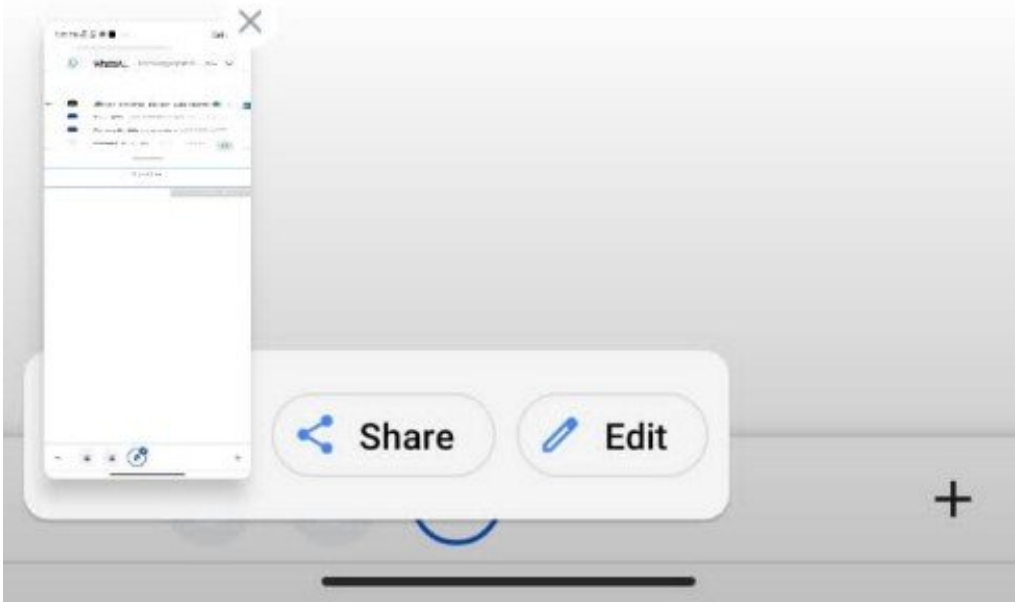
Reload Math Equations

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

$D_u f = |\nabla f| \cos \pi$

$D_u f = |\nabla f| \cos 1$

$D_u f = |\nabla f| \cos 0$



7:26

28.8 K/s

quiz.vu.edu.pk/Qui

40

BC230412126: MARYAM NAYAB

Time Left 00 min 00

MTH201 Quiz#1

Quiz Start Time: 07:15 PM, 17 June 2022

Question # 10 of 10 (Start time: 07:28:09 PM, 17 June 2022)

Total Marks: 1

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_0) and radius r such that _____

Select the correct option

Reload with equations

- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) > f(x, y)$ for all $(x, y) \in K$

Save & Close Review & Save & Next Question

46 32 7:31

Quiz
quiz.vu.edu.pk

BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 90 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 1 of 10 (Start time: 07:30:55 PM, 17 June 2022)

Total Marks: 1

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

Select the correct option

Reload Math Equations

- $dV = xydx + xzdy + xydz$
- $dV = yzdx + xzdy + xydz$
- $dV = xzdx + xydy + xydz$
- $dV = yzdx + xydy + xzdz$

Click to Save Answer & Move to Next Question

4G 33 7:30

Start Quiz
quiz.vu.edu.pk

Quiz #1 Total Questions : 10

Announcement

It has come to the University's knowledge that some students are using unfair means while attempting their Mid-Term quiz.

The University is monitoring & analyzing the quiz attempts and if a student is found involved in using unfair means,

i.e., helping tools/software, Web Extension, Add-ons etc., an Unfair Means Case (UMC) will be made against such student(s)

including cancellation of their Mid-Term quiz.

Please read the following instructions carefully!

1. Quiz will be based upon Multiple Choice Questions (MCQs)
2. You have to attempt the quiz online. You can start attempting the quiz any time within given date(s) of a particular subject by clicking the link for Quiz in VULMS.
3. Each question has a fixed time of 90 seconds. So you have to save your answer before 90 seconds. But due to unstable internet speeds, it is recommended that you should save your answer within 60 seconds. While attempting a question, keep an eye on the remaining time.
4. Attempting quiz is unidirectional. Once you move forward to the next question, you can not go back to the previous one. Therefore before moving to the next question, make sure that you have selected the best option.
5. **DO NOT** press **Back Button / Backspace Button** while attempting a question, otherwise you will lose that question.
6. **DO NOT** refresh the page unnecessarily, **specially** when following messages appear
   - Saving...
   - Question Timeout. Now loading next question...
7. **Javascript MUST be enabled** in your browser; otherwise you will not be able to attempt the quiz.
8. If for any reason, you lose access to internet (like power failure or disconnection of internet), you will be able to attempt the quiz again from the question next to the last shown question. But remember that you have to complete the quiz before expiry of the deadline.
9. If any student failed to attempt the quiz in given time then no re-take or offline quiz will be held.

Start Quiz

BC200404667: SHUMAILA SHEHZADI

MTH201:Quiz#1

Question # 1 of 10 (Start time: 07:31:13 PM, 17 June 2022)

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

Select the correct option

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

MTH201:Quiz#1

Question # 2 of 10 (Start time: 07:32:10 PM, 17 June 2022)

$$
\text{Given a surface } f(x,y,z) = 0 \text{ The direction ratios of a line normal to the surface are } f_x, f_y, f_z
$$

Select the correct option

- $f_{(x_0)}.f'_{(y_0)}.f'_{(z_0)}$
- $f(0).f(0).f(0)$
- $f(x).f(y).f(z)$
- $f_x.f'_y.f'_z$

46 31 7:32

Quiz
quiz.vu.edu.pk

BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 2 of 10 (Start time: 07:32:42 PM, 17 June 2022)

Total Marks: 1

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 Math Equations

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

Click to Save Answer & Move to Next Question

BC200404667: SHUMAILA SHEHZADI

MTH201:Quiz#1

Question # 2 of 10 (Start time: 07:32:10 PM, 17 June 2022)

\[
(\text{Given a surface }}f(x,{\text{ }}y,{\text{ }}z) = 0 {\text{ The direction ratios of a line normal to the surface are }}{\text{ }}{\text{ }}{\text{ }}{\text{ }}{\text{ }}{\text{ }}
\]

Select the correct option

\[
f_{xx} ,{\text{ }}f{}_{yy},{\text{ }}f{}_{zz}
\]

\[
f(0),{\text{ }}f(0),{\text{ }}f(0)
\]

\[
f(x),{\text{ }}f(y),{\text{ }}f(z)
\]

\[
f_x ,{\text{ }}f{}_y,{\text{ }}f{}_z
\]

MTH201:Quiz#1

Question # 2 of 10 (Start time: 07:32:10 PM, 17 June 2022)

$$
\text{Given a surface } f(x,y,z) = 0 \text{ The direction ratios of a line normal to the surface are } f_x \; f_y \; f_z
$$

Select the correct option

- $f_{xx} \; f_{yy} \; f_{zz}$
- $f(0) \; f(0) \; f(0)$
- $f(x) \; f(y) \; f(z)$
- $f_x \; f_y \; f_z$

46 30 7:33

Quiz
quiz.vu.edu.pk

BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 3 of 10 (Start time: 07:33:37 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f_x(x)dx - f_y(x)dy$
- $f_x(x)dy + f_y(x)dx$
- $f_x(x)dx + f_y(x)dy$
- $f_x(x)dy - f_y(x)dx$

Click to Save Answer & Move to Next Question

Not secure | https://quiz.vu.edu.pk/QuizQuestion.aspx?ver=416da744-d4

BC200404667: SHUMAILA SHEHZADI

MTH201:Quiz#1

Question # 3 of 10 (Start time: 07:33:42 PM, 17 June 2022)

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

Select the correct option

- Zero scalar
- Zero vector

46 29 7:34

Quiz
quiz.vu.edu.pk

BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 4 of 10 (Start time: 07:34:51 PM, 17 June 2022)

Total Marks: 1

$\vec{r}(t) = 3\cos t\,\vec{i} + 3\sin t\,\vec{j},\ 0 \leq t \leq \pi$, is a _____ form of a curve in the plane.

Select the correct option

Reload Math Equations

- implicit
- explicit
- parametric vector
- parametric

Click to Save Answer & Move to Next Question

du.pk/QuizQuestion.aspx?ver=a3fdc1c9-c863-4fc2-ad57-28ce174488b7

ne 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - f^2_{xy}(x_0, y_0)$.

if $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0).

if $D = 0$, then no conclusion can be drawn.

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).

46 29 7:35

Quiz
quiz.vu.edu.pk

BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 5 of 10 (Start time: 07:35:26 PM, 17 June 2022)

Total Marks: 1

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

Reload Math Equations

- -1
- 1
- 2
- 0

Click to Save Answer & Move to Next Question

46 29 7:36

Quiz
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BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 6 of 10 (Start time: 07:36:17 PM, 17 June 2022)

Total Marks: 1

The gradient of a scalar function$\phi$is defined as

Select the correct option

Reload Math Equations

- $grad\phi = \nabla\phi$
- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi - \nabla f(x,y)\phi$

Click to Save Answer & Move to Next Question

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4G 27 7:37

Quiz
quiz.vu.edu.pk

BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 7 of 10 (Start time: 07:37:09 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- vector
- scalar
- discontinuous
- continuous

The gradient of a scalar function ϕ is defined as

$$grad\phi = \nabla f(x,y)\phi$$

$$grad\phi = \nabla\phi$$

$$grad\phi = -\nabla f(x,y)\phi$$

$$grad\phi = \quad \nabla f(x,y)\phi$$

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Quiz
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Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 8 of 10 (Start time: 07:37:55 PM, 17 June 2022)

Total Marks: 1

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ---------m/s.

Select the correct option

- 1
- 5
- 7
- 12

46 27 7:38

Quiz
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BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 9 of 10 (Start time: 07:38:33 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question






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

$|\vec{a} \times \vec{b}| \times |\vec{c}| \cos\theta$

$|\vec{a} \times \vec{b}| \cdot |\vec{c}| \cos\theta$

$|\vec{a} \cdot \vec{b}| \cdot |\vec{c}| \cos\theta$

$|\vec{a} \cdot \vec{b}| \times |\vec{c}| \sin\theta$

46 27 7:39

Quiz
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BC190407302: MUHAMMAD SADDAM LIAQAT

Time Left 84 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:30 PM, 17 June 2022

Question # 10 of 10 (Start time: 07:39:03 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point$(0, 2)$. $f_{xx}(0, 2) = 4, f_{yy}(0, 2) = 0 \text{and} f_{xy}(0, 2) = 4$
so$D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

- thenf has a relative maximum at$(0, 2)$.
- then no conclusion can be drawn.
- then f has a relative minimum at$(0, 2)$.
- then f has a saddlepoint at$(0, 2)$.

Click to Save Answer & Move to Next Question

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BC200416023: ARSHAD NAWAZ

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 1 of 10 (Start time: 07:38:48 PM, 17 June 2022)

Total Marks: 1

A discontinuous function on a closed and bounded set need not have any _____.

Select the correct option

- absolute extrema
- relative extrema

Click to Save Answer & Move to Next Question

WhatsApp
1867 messages from 36 chats

BC200416023: ARSHAD NAWAZ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 2 of 10 (Start time: 07:39:44 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point$(0, 2), f_{xx}(0, 2) = 4, f_{yy}(0, 2) = 0andf_{xy}(0, 2) = 4$ so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

- then f has a saddlepoint at$(0, 2)$.
- then no conclusion can be drawn.
- then f has a relative minimum at$(0, 2)$.
- thenf has a relative maximum at$(0, 2)$.

Click to Save Answer & Move to Next Question

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2)

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

$dV = yzdx + xydy + xzdz$

$dV = xzdx + xydy + xydz$

$dV = xydx + xzdy + xydz$

$dV = yzdx + xzdy + xydz$

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BC200416023: ARSHAD NAWAZ

Time Left 86 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 3 of 10 (Start time: 07:40:28 PM, 17 June 2022)

Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

- final
- saddle
- initial
- inflection

Click to Save Answer & Move to Next Question

2)

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

$dV = yzdx + xydy + xzdz$

$dV = xzdx + xydy + xydz$

$dV = xydx + xzdy + xydz$

$dV = yzdx + xzdy + xydz$

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2022)

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$D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

if $D < 0$then f has a saddlepoint 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).

if $D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at(x_0, y_0).

if $D = 0$, then no conclusion can be drawn.

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BC200416023: ARSHAD NAWAZ

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 4 of 10 (Start time: 07:41:47 PM, 17 June 2022)

Total Marks: 1

Two vectors of magnitudes [4,5] making an angle of 30degree, then the area of parallelogram associated with these two vectors is --------- square units.

Select the correct option

- 10*Sqrt(3)
- 10
- 20*Sqrt(2)
- 10*Sqrt(2)

Click to Save Answer & Move to Next Question

e 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

if $D < 0$ then f has a saddlepoint 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).

if $D > 0$ and $f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0).

if $D = 0$, then no conclusion can be drawn.

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7:42 PM

BC200416023: ARSHAD NAWAZ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 5 of 10 (Start time: 07:42:55 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) > f(x, y)$ for all $(x, y) \in D$

Click to Save Answer & Move to Next Question

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BC200404667: SHUMAILA SHEHZADI

MTH201:Quiz#1

Time Left 85 sec(s)

Quiz Start Time: 07:31 PM, 17 June 2022

Question # 10 of 10 (Start time: 07:42:43 PM, 17 June 2022)

Total Marks: 1

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

Reload Math Equations

- -1
- 1
- 2
- 0

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0404667: SHUMAILA SHEHZADI

201:Quiz#1

ion # 10 of 10 (Start time: 07:42:43 PM, 17 June 2022)

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - -

lect the correct option

1

1

2

0

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BC200416023: ARSHAD NAWAZ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 6 of 10 (Start time: 07:43:51 PM, 17 June 2022)

Total Marks: 1

Two surfaces are said to be orthogonal at the point of their intersection if their normals at that point are ---------

Select the correct option

- in opposite direction
- Parallel
- Overlapping
- Perpendicular

Click to Save Answer & Move to Next Question

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BC200416023: ARSHAD NAWAZ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 7 of 10 (Start time: 07:44:39 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point$(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -1$and$f_{xy}(0, 2) = 0$
so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 2$

Select the correct option

Reload Math Equations

- then f has a saddlepoint at$(0, 2)$.
- then f has a relative minimum at$(0, 2)$.
- then no conclusion can be drawn.
- thenf has a relative maximum at$(0, 2)$.

Click to Save Answer & Move to Next Question

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BC200416023: ARSHAD NAWAZ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 8 of 10 (Start time: 07:45:41 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

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

Click to Save Answer & Move to Next Question

Question # 1 of 10 (Start time: 07:47:02 PM, 17 June 2022) Total Marks: 1

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

Reload Math Equations

- If $D = 0$, then no conclusion can be drawn.
- 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 f has a relative maximum at (x_0, y_0).
- If $D > 0$ and $f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0).

Click to Save Answer & Move to Next Question

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BC200416023: ARSHAD NAWAZ

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 9 of 10 (Start time: 07:48:05 PM, 17 June 2022)

Total Marks: 1

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

Reload Math Equations

- $if D < 0$ then f has a saddlepoint at (x_0, y_0).
- $if D \neq 0$, then no conclusion can be drawn.
- $if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0).
- $if D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0).

Click to Save Answer & Move to Next Question

WhatsApp
1879 messages from 38 chats

BC200416023: ARSHAD NAWAZ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 07:38 PM, 17 June 2022

Question # 10 of 10 (Start time: 07:49:05 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- implicit
- parametric
- parametric vector
- explicit

Question # 2 of 10 (Start time: 07:49:18 PM, 17 June 2022) Total Marks: 1

Let f be a function of two variables at a critical point$(1, 0), f_{xx}(1, 0) = 4, f_{yy}(1, 0) = 2andf_{xy}(1, 0) = 0$

so$D = f_{xx}(1, 0)f_{yy}(1, 0) - f^2_{xy}(1, 0) = 8$

Select the correct option

Reload Math Equations

- then f has a relative minimum at$(1, 0)$.
- then no conclusion can be drawn.
- thenf has a relative maximum at$(1, 0)$.
- then f has a relative maximum at$(1, 0)$.

Click to Save Answer & Move to Next Question

Question # 3 of 10 (Start time: 07:51:12 PM, 17 June 2022) Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

- inflection
- initial
- saddle
- final

Click to Save Answer & Move to Next Question

Question # 4 of 10 (Start time: 07:51:50 PM, 17 June 2022) Total Marks: 1

The gradient of a scalar function ϕ is defined as

Select the correct option

Reload Math Equations

- $grad\phi = \nabla f(x,y)\phi$
- $grad\phi = \nabla\phi$
- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi = -\nabla f(x,y)\phi$

Click to Save Answer & Move to Next Question

Question # 5 of 10 (Start time: 07:52:45 PM, 17 June 2022) Total Marks: 1

Let f be a function of two variables at a critical point$(0, 2), f_{xx}(0, 2) = 4, f_{yy}(0, 2) = 0andf_{xy}(0, 2) = 4$
so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

- then f has a saddlepoint at$(0, 2)$.
- thenf has a relative maximum at$(0, 2)$.
- then f has a relative minimum at$(0, 2)$.
- then no conclusion can be drawn.

Click to Save Answer & Move to Next Question

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Question # 6 of 10 (Start time: 07:54:02 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question

ample

Locate all relative extrema a
saddle points of

$$f(x, y) = 4xy - x^4 - y^4.$$

$f_x(x, y) = 4y - 4x^3$, $f_y(x, y) = 4x -$

For critical points

$$f_x(x, y) = 0$$

$$4y - 4x^3 = 0 \qquad (1)$$

$$y = x^3$$

$$f_y(x, y) = 0$$

$$4x - 4y^3 = 0 \qquad (2)$$

$$x = y^3$$

Solving (1) and (2), we have the critical points (0,0), (1, 1),(−1, −1).

Now $f_{xx}(x, y) = -12x^2$, $f_{xx}(0, 0) = 0$

$f_{yy}(x, y) = -12y^2$, $f_{yy}(0,0) = 0$

$f_{xy}(x, y) = 4$, $f_{xy}(0, 0) = 4$

$\mathbf{D = f_{xx}(0,0)\, f_y(0,0) - f^2_{xy}(0,0)}$

$= (0)(0) - (4)^2 = -16 < 0$

This shows that (0,0) is the saddle point.

$f_{xx}(x, y) = -12x^2$, $f_{xx}(1,1) = -12 < 0$

$f_{yy}(x,y) = -12y^2$, $f_y(1,1) = -12$

$f_{xy}(x, y) = 4$, $f_{xy}(1,1) = 4$

$\mathbf{D = f_{xx}(1,1)\, f_{yy}(1,1) - f^2_{xy}(1, 1)}$

$= (-12)(-12) - (4)^2 = 128 > 0$

This shows that f has relative maximum at (1,1).

$f_{xx}(x,y) = -12x^2$, $f_{xx}(-1, -1) = -12 < 0$

$f_y(x, y) = -2y^2$

Question # 7 of 10 (Start time: 07:55:09 PM, 17 June 2022) Total Marks: 1

The value $f(x_o, y_o)$ is a relative maximum of $f(x, y)$ on domain D, if there exists an open disc $K \subset D$ with center (x_o, y_o) and radius r such that - - - - - - - -

Select the correct option

Reload Math Equations

- $f(x_o, y_o) = f(x, y)$ for all $(x, y) \in K$
- $f(x_o, y_o) < f(x, y)$ for all $(x, y) \in K$
- $f(x_o, y_o) \geq f(x, y)$ for all $(x, y) \in K$
- $f(x_o, y_o) \leq f(x, y)$ for all $(x, y) \in K$

Click to Save Answer & Move to Next Question

that $f(0,0)$ can be interpreted as the derivative with respect to x of the function

$$f(x, 0) = \sqrt{x^2 + 0} = |x| \quad \text{at } x = 0.$$

But $|x|$ is not differentiable at $x = 0$, so $f_x(0,0)$ does not exist. Similarly, $f_y(0,0)$ does not exist. The function f has a relative minimum at the critical point (0,0).

The Second Partial Derivative Test

Let f be a function of two variables with continuous second order partial derivatives in some circle centered at a critical point (x_0, y_0), and let

$$D = f_{xx}(x_0, y_0)\, f_{yy}(x_0, y_0) - f^2_{xy}(x_0, y_0)$$

(a) If $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then f has a **relative minimum** at (x_0, y_0).

(b) If $D > 0$ and $f_{xx}(x_0, y_0) < 0$, then f has a **relative maximum** at (x_0, y_0).

(c) If $D < 0$, then f has a **saddle point** at (x_0, y_0).

(d) If $D = 0$, then no conclusion can be drawn.

Question # 8 of 10 (Start time: 07:55:56 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

Reload Math Equations

○	$f_x(x_0, y_0) = 0, f_y(x_0, y_0) = 0$
○	$f_x(x_0, y_0) < 0, f_y(x_0, y_0) > 0$
○	Options $f_x(x_0, y_0) > 0, f_y(x_0, y_0) > 0$
○	$f_x(x_0, y_0) < 0, f_y(x_0, y_0) < 0$

Click to Save Answer & Move to Next Question

Question # 9 of 10 (Start time: 07:56:56 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

- y-axis
- x-axis
- gradient vector
- unit vector

Click to Save Answer & Move to Next Question

continuous on a closed and bounded set R, then f has both an absolute maximum and on absolute minimum on R.

Remarks

If any of the conditions the Extreme Value Theorem fail to hold, then there is no guarantee that an absolute maximum or absolute minimum exists on the region. Thus, a discontinuous function on a closed and bounded set need not have any extrema, and a continuous function on a set that is not closed and bounded also may have any absolute extrema.

Extreme values or extrema of f

The maximum and minimum values of f are referred to as extreme values of extrema. Let a function f of two variables be defined on an open disc

$$K = \{(x, y): (x - x_0)^2 + (y - y_0)^2 < r^2\}.$$

Suppose $f_x(x_0, y_0)$ and $f_y(x_0, y_0)$ both exist on K

If f has relative extrema at (x_0, y_0), then

$$f_x(x_0, y_0) = 0 = f_y(x_0, y_0).$$

points (x, y) where $f(x, y) < f(a, b)$ surface $z = f(x, y)$ is called a saddle

Remarks

Thus, the only points where a func points and boundary points. As w every critical point gives rise to variable might have a point of inf have a saddle point.

EXAMPLE

Fine the critical points of the gi

$$f(x, y) = x^3 + y^3 - 3axy, a$$

f_x, f_y exist at all points of the do

$$f_x = 3x^2 - 3ay, \quad f_y = 3y^2$$

For critical points $f_x = f_y$

Therefore, $x^2 - ay = 0$

and $ax - y^2 = 0$ (2)

Substituting the value of x from (2) we have

$$\frac{y^4}{a^2} - ay = 0$$

$$y(y^3 - a^3) = 0$$

$y = 0,$ y

and so

$x = 0,$ $x = a$

The critical points are $(0, 0)$ an

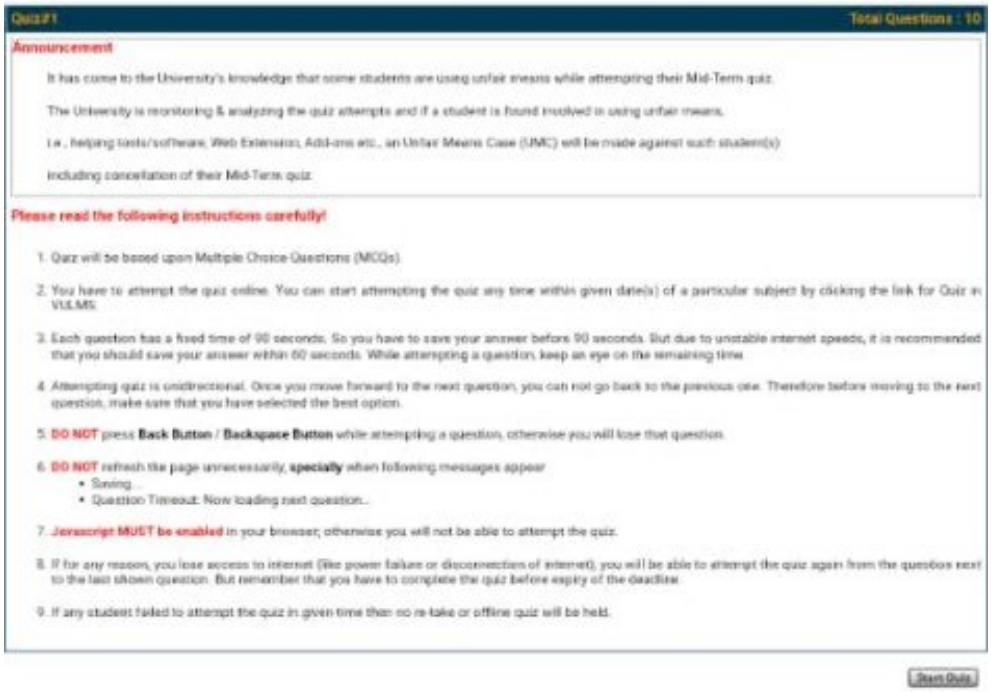
Question # 10 of 10 (Start time: 07:59:20 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

- vector
- scalar
- discontinuous
- continuous

Click to Save Answer & Move to Next Question



Quiz#1 Total Questions : 10

Announcement

It has come to the University's knowledge that some students are using unfair means while attempting their Mid-Term quiz.

The University is monitoring & analyzing the quiz attempts and if a student is found involved in using unfair means,

i.e., helping tools/software, Web Extension, Add-ons etc., an Unfair Means Case (UMC) will be made against such student(s)

including cancellation of their Mid-Term quiz.

Please read the following instructions carefully!

1. Quiz will be based upon Multiple Choice Questions (MCQs).
2. You have to attempt the quiz online. You can start attempting the quiz any time within given date(s) of a particular subject by clicking the link for Quiz in VULMS.
3. Each question has a fixed time of 90 seconds. So you have to save your answer before 90 seconds. But due to unstable internet speeds, it is recommended that you should save your answer within 60 seconds. While attempting a question, keep an eye on the remaining time.
4. Attempting quiz is unidirectional. Once you move forward to the next question, you can not go back to the previous one. Therefore before moving to the next question, make sure that you have selected the best option.
5. DO NOT press **Back Button** / **Backspace Button** while attempting a question, otherwise you will lose that question.
6. DO NOT refresh the page unnecessarily, **specially** when following messages appear
   - Saving...
   - Question Timeout. Now loading next question...
7. Javascript MUST be enabled in your browser, otherwise you will not be able to attempt the quiz.
8. If for any reason, you lose access to internet (like power failure or disconnection of internet), you will be able to attempt the quiz again from the question next to the last shown question. But remember that you have to complete the quiz before expiry of the deadline.
9. If any student failed to attempt the quiz in given time then no re-take or offline quiz will be held.

Start Quiz

8:03

quiz.vu.edu.pk/QuizQue

6

BC200410780: FAQRAM

Time Left 88 sec(s)

MTH201 /Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

Question # 1 of 10 (Start time: 08:02:17 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- saddle point.
- extreme point.
- initial point.
- stationary point.

Save & Next Answer & Move to Next Question

8:04

quiz.vu.edu.pk/QuizQue

6

A _____ need not be the highest point on the entire graph.

Select the correct option

- absolute maximum
- absolute minimum
- relative minimum
- relative maximum

Save and Next Question | Finish Test Question

◻ ○ ◁

4th Semeste
Study with v

iz.vu.edu.pk/QuizQue

MTH201 Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

Question # 3 of 10 (Start time: 08:04:41 PM, 17 June 2022)

Total Marks: 1

The function decreases most rapidly in the direction of

Select the correct option

Reload Math Equations

- $-|\nabla f|$
- $-\nabla f * \hat{u}$
- $-\nabla f$
- $|\nabla f|$

quiz.vu.edu.pk

BC200411678: AMINA MUBEEN

MTH201:Quiz#1

Question # 2 of 10 (Start time: 08:05:49 PM, 17 June 2022)

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
- Infinitely many
- Finitely many

8:07

quiz.vu.edu.pk/QuizQue

6

BC200410780: FAQRAM

Time Left 88 sec(s)

MTH201 /Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

Question # 4 of 10 (Start time: 08:06:28 PM, 17 June 2022)

Total Marks: 1

Let m be the slope and $P_1(x_1, y_1)$ be the point of required line, then point - slope form is _____

Select the correct option

Reload Math Equations

- $y - y_1 = m(x - x_1)$
- $y = mx + c$
- $x + y_1 = m(x + x_1)$
- $y = mx + c$

8:07

quiz.vu.edu.pk/QuizQue

6

Quiz

Time Left 74

Quiz Start Time: 08:05 PM, 17 June 2022

PM, 17 June 2022)

Total Marks:

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

Reload Math Equations

$y = m x . c$

$y - y_0 = m(x - x_0)$

$y = m x + c$

$y + y_0 = m(x + x_0)$

TOSHIBA

Time Left 83 sec(s)

Quiz Start Time: 08:05 PM, 17 June 2022

M, 17 June 2022)

Total Marks: 1

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

Reload Math Equations

$y = mx + c$

$y + y_0 = m(x + x_0)$

$y - y_0 = m(x - x_0)$

$y = m.x.c$

TOSHIBA

8:08

quiz.vu.edu.pk/QuizQue:

6

BC200410780: FAQRAM

Time Left 88 sec(s)

MTH201 /Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

Question # 5 of 10 (Start time: 08:07:49 PM, 17 June 2022)

Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

- final
- saddle
- inflection
- initial

Save and Next Answer & Move to Next Question

Quiz

quiz.vu.edu.pk

2004116076: AMINA MUBEEN

1Q201:Quiz#1

Quiz Start Time: 08:05 PM, 17

Question # 5 of 10 (Start time: 08:08:57 PM, 17 June 2022)

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

Reload Math Eq

2

-1

1

0

TOSHIBA

Time Left 79

Quiz Start Time: 08:05 PM, 17 June 2022

22)

Total Marks: 1

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

Reload Math Equations

$D_u f = |\nabla f| \cos x$

$D_u f = |\nabla f| \cos 0$

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

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

TOSHIBA

8:10

quiz.vu.edu.pk/QuizQue

6

BC200410780: FAQRAM

Time Left 87 sec(s)

MTH201 /Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

Question # 6 of 10 (Start time: 08:09:49 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) > f(x, y)$ for all $(x, y) \in D$

Next Question

Time Left 82 SECS

Quiz Start Time: 08:05 PM, 17 June 2022

22)

Total Marks: 1

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

Reload Math Equations

$D_u f = |\nabla f| \cos 0$

$D_u f = |\nabla f| \cos 1$

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

$D_u f = |\nabla f| \cos \pi$

TOSHIBA

8:12

quiz.vu.edu.pk/QuizQue:

6

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

Select the correct option

- Arbitrary direction
- Direction
- Direction perpendicular to
- Opposite to the direction

Save and Next Question

Quiz Start Time: 08:05 PM, 17 June 2022

Total Marks: 1

The del operator is defined as

Reload Math Equations

$$\nabla \equiv -\frac{\partial}{\partial x}i - \frac{\partial}{\partial y}j - \frac{\partial}{\partial z}k$$

$$\nabla \equiv \frac{\partial}{\partial x}k + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}i$$

$$\nabla \equiv \frac{\partial}{\partial x}i + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}k$$

$$\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$$

8:12 PM
Friday
6/17/2022

TOSHIBA

Time Left 82

Quiz Start Time: 08:05 PM, 17 June 2022

17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -1$ and $f_{xy}(0, 2) = 0$
so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 2$

Reload Math Equations

then f has a saddlepoint at $(0, 2)$.

then f has a relative maximum at $(0, 2)$.

then f has a relative minimum at $(0, 2)$.

then no conclusion can be drawn.

TOSHIBA

8:13

quiz.vu.edu.pk/QuizQue

6

BC200410780: FAQRAM

Time Left 88 sec(s)

MTH201 Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

Question # 8 of 10 (Start time: 08:12:34 PM, 17 June 2022)

Total Marks: 1

A continuous function on a set that is not closed and bounded need not have any _____.

Select the correct option

- relative extrema
- absolute extrema

Click to Save Answer & Move to Next Question





Quiz List

Quiz

quiz.vu.edu.pk

BC200411678: AMINA MUBEEN

MTH201:Quiz#1

Question # 10 of 10 (Start time: 08:13:58 PM, 17 June 2022)

A _____ need not be the highest point on the entire graph.

Select the correct option

- absolute minimum
- relative maximum
- relative minimum
- absolute maximum

TOSHIBA

8:15

quiz.vu.edu.pk/QuizQue

BC200410780: FAQRAM

Time Left 61 min(s)

MTH201:Quiz#1

Quiz Start Time: 08:02 PM, 17 June 2022

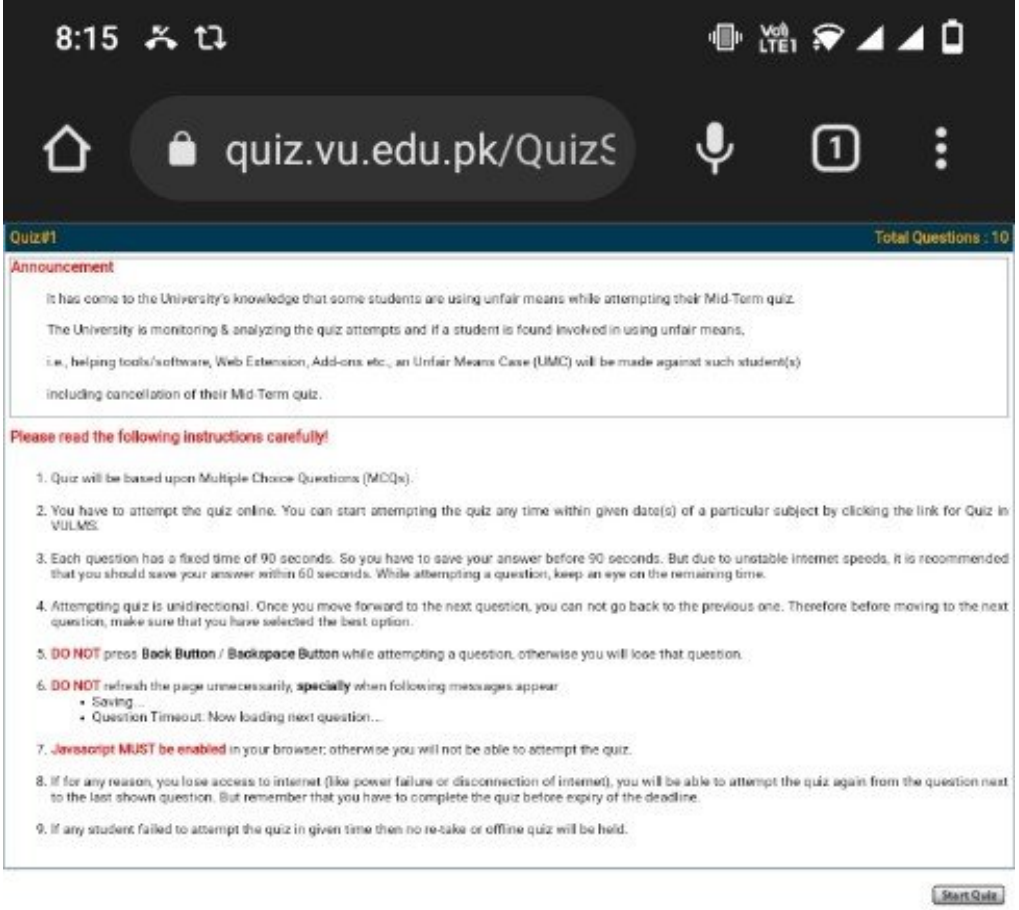
Question # 9 of 10 (Start time: 08:14:15 PM, 17 June 2022)

Total Marks: 1

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_0) and radius r such that ----------

Select the correct option

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$


8:15
quiz.vu.edu.pk/QuizS
Quiz#1
Total Questions : 10
Announcement
It has come to the University's knowledge that some students are using unfair means while attempting their Mid-Term quiz.
The University is monitoring & analyzing the quiz attempts and if a student is found involved in using unfair means,
i.e., helping tools/software, Web Extension, Add-ons etc., an Unfair Means Case (UMC) will be made against such student(s)
including cancellation of their Mid-Term quiz.
Please read the following instructions carefully!
1. Quiz will be based upon Multiple Choice Questions (MCQs).
2. You have to attempt the quiz online. You can start attempting the quiz any time within given date(s) of a particular subject by clicking the link for Quiz in VULMS.
3. Each question has a fixed time of 90 seconds. So you have to save your answer before 90 seconds. But due to unstable internet speeds, it is recommended that you should save your answer within 60 seconds. While attempting a question, keep an eye on the remaining time.
4. Attempting quiz is unidirectional. Once you move forward to the next question, you can not go back to the previous one. Therefore before moving to the next question, make sure that you have selected the best option.
5. DO NOT press Back Button / Backspace Button while attempting a question, otherwise you will lose that question.
6. DO NOT refresh the page unnecessarily, specially when following messages appear
• Saving ...
• Question Timeout. Now loading next question...
7. Javascript MUST be enabled in your browser; otherwise you will not be able to attempt the quiz.
8. If for any reason, you lose access to internet (like power failure or disconnection of internet), you will be able to attempt the quiz again from the question next to the last shown question. But remember that you have to complete the quiz before expiry of the deadline.
9. If any student failed to attempt the quiz in given time then no re-take or offline quiz will be held.
Start Quiz

8:15

quiz.vu.edu.pk/QuizC

BC200402453: MUHAMMAD ISHAQ

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:15 PM, 17 June 2022

Question # 1 of 10 (Start time: 08:15:42 PM, 17 June 2022)

Total Marks: 1

The value $f(x_0, y_0)$ is a relative minimum of $f(x, y)$ on domain D, if there exists an open disc $K \subset D$ with center (x_0, y_0) and radius r such that - - - - - - -

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \geq f(x, y)$ 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 $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$

Click to Save Answer & Move to Next Question

8:16

quiz.vu.edu.pk/QuizQue

6

Question # 10 of 10 (Start time: 08:15:39 PM, 17 June 2022)

Total Marks: 1

If $f(x, y, z) = \frac{1}{2}x^4y^{-2} - z$ then f_x, f_y and f_z are

Select the correct option

Reload Math Equations

- $f_x = 4x^3y^{-2}, f_y = -2x^4y^{-3}$ and $f_z = -1$
- $f_x = 4x^3y^{-2}, f_y = -x^4y^{-3}$ and $f_z = -1$
- $f_x = 2x^3y^{-2}, f_y = x^4y^{-3}$ and $f_z = -1$
- $f_x = 2x^3y^{-2}, f_y = -x^4y^{-3}$ and $f_z = -1$

8:18

quiz.vu.edu.pk/QuizC

BC200402453: MUHAMMAD ISHAQ

Time Left 83 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:15 PM, 17 June 2022

Question # 6 of 10 (Start time: 08:18:04 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -1$ and $f_{xy}(0, 2) = 0$ so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 2$

Select the correct option

Reload Math Equations

- then f has a saddlepoint at $(0, 2)$.
- then no conclusion can be drawn.
- thenf has a relative maximum at $(0, 2)$.
- then f has a relative minimum at $(0, 2)$.

Click to Save Answer & Move to Next Question

MTH201:Quiz#1

Quiz Start Time: 08:14 PM, 17 June 2022

Question # 5 of 10 (Start time: 08:18:02 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- explicit
- parametric
- implicit
- parametric vector

MTH201:Quiz#1

Quiz Start Time: 08:14 PM, 17 June 2022

Question # 4 of 10 (Start time: 08:16:15 PM, 17 June 2022)

Total Marks: 1

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

Reload Math Equations

- $if D \neq 0$, then no conclusion can be drawn.
- $if D < 0$ then f has a saddlepoint 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).
- $if D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at (x_0, y_0).

Question # 6 of 10 (Start time: 08:18:43 PM, 17 June 2022) Total Marks: 1

Let f be a function of two variables at a critical point $(1,0)$, $f_{xx}(1,0) = 4$, $f_{yy}(1,0) = 2$ and $f_{xy}(1,0) = 0$
so $D = f_{xx}(1,0)f_{yy}(1,0) - f^2{}_{xy}(1,0) = 8$

Select the correct option

Reload Math Equations

- then f has a relative maximum at $(1,0)$.
- then f has a relative minimum at $(1,0)$.
- then no conclusion can be drawn.
- then f has a relative maximum at $(1,0)$.

8:19

quiz.vu.edu.pk/QuizC

BC200402453: MUHAMMAD ISHAQ

Time Left 82 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:15 PM, 17 June 2022

Question # 7 of 10 (Start time: 08:18:58 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question

BC200408270: BREERA LATIF

MTH201:Quiz#1

Question # 2 of 10 (Start time: 06:19:43 PM, 17 June 2022)

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

Select the correct option

- 1
- 12
- 5
- 7

TOSHIBA

8:20

quiz.vu.edu.pk/QuizC

BC200402453: MUHAMMAD ISHAQ

Time Left 85 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:15 PM, 17 June 2022

Question # 9 of 10 (Start time: 08:20:18 PM, 17 June 2022)

Total Marks: 1

If a vector of magnitude '4' is making angle 30-degree with Y-axis then its component vector along x-axis is ----------.

Select the correct option

- -2
- 2*sqrt(3)
- 2
- -2*sqrt(3)

Click to Save Answer & Move to Next Question

MTH201:Quiz#1

Quiz Start Time: 08:14 PM, 17 June 2022

Question # 7 of 10 (Start time: 08:20:07 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f_x = 2x, f_y = 2y \text{and } f_z = -6z$
- $f_x = 2x, f_y = 2y \text{and } f_z = 6z$
- $f_x = 2x, f_y = 2 \text{and } f_z = 6z$
- $f_x = 2x, f_y = 2 \text{and } f_z = -6z$

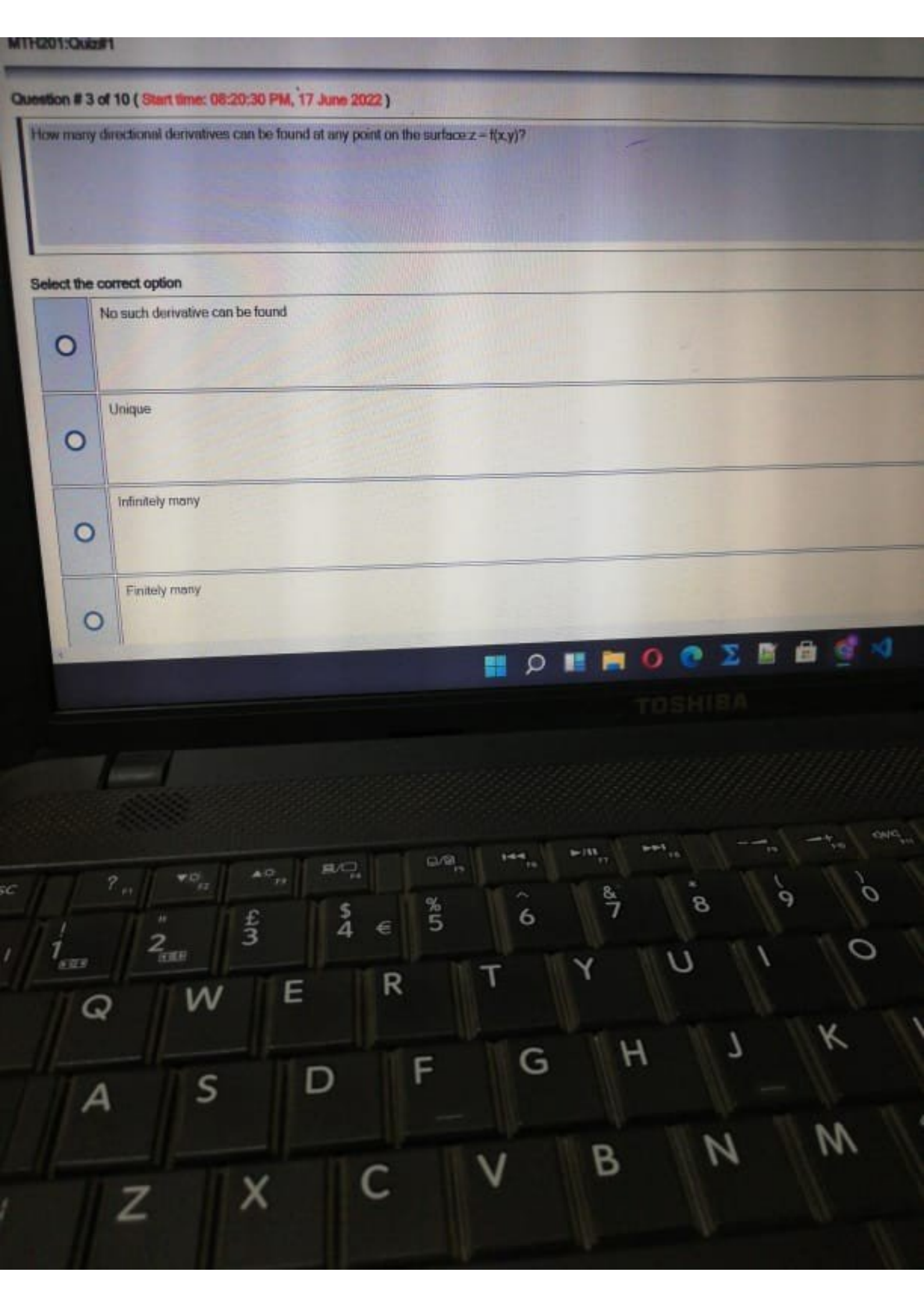
MTH201:Quiz#1

Question # 3 of 10 (Start time: 06:20:30 PM, 17 June 2022)

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

Select the correct option

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



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

Select the correct option

- Direction perpendicular to
- Arbitrary direction
- Direction
- Opposite to the direction

/quiz.vu.edu.pk/QuizQuestion.aspx?ver=21e572ac-53f7-4940-bfb7-b1ccc5daad98

Time

Quiz Start Time: 08:21 PM,

0 PM, 17 June 2022)

The function decreases most rapidly in the direction of

Reload Math

$-\nabla f \times \hat{u}$

$-|\nabla f|$

$|\nabla f|$

$-\nabla f$

8:22

quiz.vu.edu.pk/QuizC

BC200402453: MUHAMMAD ISHAQ

Time Left 80 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:15 PM, 17 June 2022

Question # 10 of 10 (Start time: 08:22:00 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question

Quiz

quiz.vu.edu.pk

BC200408270: BREERA LATIF

MTH201:Quiz#1

Question # 5 of 10 (Start time: 08:22:06 PM, 17 June 2022)

Quiz Start Time: 08:19 PM, 17 Jun

Two vectors of magnitudes |4,5| making an angle of 30degree, then the area of parallelogram associated with these two vectors is ——— square units

Select the correct option

- 10*Sqrt(3)
- 10
- 20*Sqrt(2)
- 10*Sqrt(2)

TOSHIBA

Question # 9 of 10 (Start time: 08:22:45 PM, 17 June 2022)

Total Marks: 1

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

Reload Math Equations

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

Quiz Start Time: 08:19 PM,

The function decreases most rapidly in the direction of

Reload Math

$-\nabla f$

$-|\nabla f|$

$|\nabla f|$

$-\nabla f \times \hat{u}$

Question # 2 of 10 (Start time: 08:22:31 PM, 17 June 2022) Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -1$ and $f_{xy}(0, 2) = 0$
so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 2$

Select the correct option

Reload Math Equations

- then f has a relative minimum at $(0, 2)$.
- then no conclusion can be drawn.
- thenf has a relative maximum at $(0, 2)$.
- then f has a saddlepoint at $(0, 2)$.

EN 8:22 AM 6/17/2022

Question # 3 of 10 (Start time: 08:23:53 PM, 17 June 2022) Total Marks: 1

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

Select the correct option

Reload Math Equations

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

EN 8:24 AM 6/17/2022

BC200404941: SADIA JAVAID

Time L

MTH201:Quiz#1

Quiz Start Time: 08:14 PM,

Question # 10 of 10 (Start time: 08:24:13 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D = 0$, then ---

Select the correct option

Reload

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

Question # 4 of 10 (Start time: 08:25:11 PM, 17 June 2022)

A continuous function on a set that is not closed and bounded need not have any _____.

Select the correct option

- absolute extrema
- relative extrema

Question # 1 of 10 (Start time: 08:25:36 PM, 17 June 2022) Total Marks: 1

Two surfaces are said to be orthogonal at the point of their intersection if their normals at that point are --------

Select the correct option

- Parallel
- Perpendicular
- Overlapping
- in opposite direction

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

Select the correct option

- y-axis
- gradient vector
- unit vector
- x-axis

MTH201 Quiz#1

Time Left sec(s)

Quiz Start Time: 08:21 PM, 17 June 2022

Question # 5 of 10 (Start time: 08:26:37 PM, 17 June 2022)

Total Marks: 1

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

Reload Math Equations

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

EN 8:26 AM 6/17/2022

MTH201:Quiz#1

Quiz Start Time: 08:25 PM, 17 June 2022

Question # 3 of 10 (Start time: 08:26:43 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{yy}(0, 2) = 0$ and $f_{xy}(0, 2) = 4$ so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

- then no conclusion can be drawn.
- then f has a relative minimum at $(0, 2)$.
- thenf has a relative maximum at $(0, 2)$.
- then f has a saddlepoint at $(0, 2)$.

MTH201:Quiz#1

Quiz Start Time: 08:25 PM, 17 June 2022

Question # 4 of 10 (Start time: 08:27:20 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $\nabla f(x, y) \times \widehat{u}$
- $\nabla f(x, y).\, u$
- $\widehat{u} \times \nabla f(x, y)$
- $\nabla f(x, y).\, \widehat{u}$

8:28 19.8 K/s 67

Quiz
quiz.vu.edu.pk

BC200402895: AQSA YOUSAF

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:25 PM, 17 June 2022

Question # 5 of 10 (Start time: 08:28:15 PM, 17 June 2022)

Total Marks: 1

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

Select the correct option

Reload Math Equations

- $dV = xydx + xzdy + xydz$
- $dV = yzdx + xydy + xzdz$
- $dV = xzdx + xydy + xydz$
- $dV = yzdx + xzdy + xydz$

0 (Start time: 08:28:12 PM, 17 June 2022)

Total Marks:

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$D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

ect option

Reload Math Equations

$if D \neq 0$, then no conclusion can be drawn.

$if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at(x_0, y_0).

$if D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at(x_0, y_0).

$if D < 0$then f has a saddlepoint at(x_0, y_0).

$$
{\text{Given a surface }}f(x,{\text{ }}y,{\text{ }}z) = 0.{\text{ The direction ratios of a line normal to the surface are }} {\text{. }}{\text{. }}{\text{. }}{\text{. }}{\text{. }}
$$

Select the correct option

- $$f(0),{\text{ }}f(0),{\text{ }}f(0)$$
- $$f(x),{\text{ }}f(y),{\text{ }}f(z)$$
- $$f_{xx} ,{\text{ }}f{}_{yy},{\text{ }}f{}_{zz}$$
- $$f_x ,{\text{ }}f{}_y,{\text{ }}f{}_z$$

Click to Save Answer & Move to Next Question

Quiz Start Time: 08:21 PM, 17 June 2022

0 (Start time: 08:29:15 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{yy}(0, 2) = 0$ and $f_{xy}(0, 2) = 4$ so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

ect option

Reload Math Equations

then f has a saddlepoint at $(0, 2)$.

then f has a relative minimum at $(0, 2)$.

thenf has a relative maximum at $(0, 2)$.

then no conclusion can be drawn.

EN 8:29 AM 6/17/2022

tart time: 08:30:06 PM, 17 June 2022)

The function decreases most rapidly in the direction of

tion

Reloa

$$-\nabla f \times \widehat{u}$$

$$|\nabla f|$$

$$-|\nabla f|$$

$$-\nabla f$$

MTH201:Quiz#1

Quiz Start Time: 08:

Question # 8 of 10 (Start time: 08:30:46 PM, 17 June 2022)

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_0) and radius r such th

Select the correct option

Re

- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$

8:31 AM

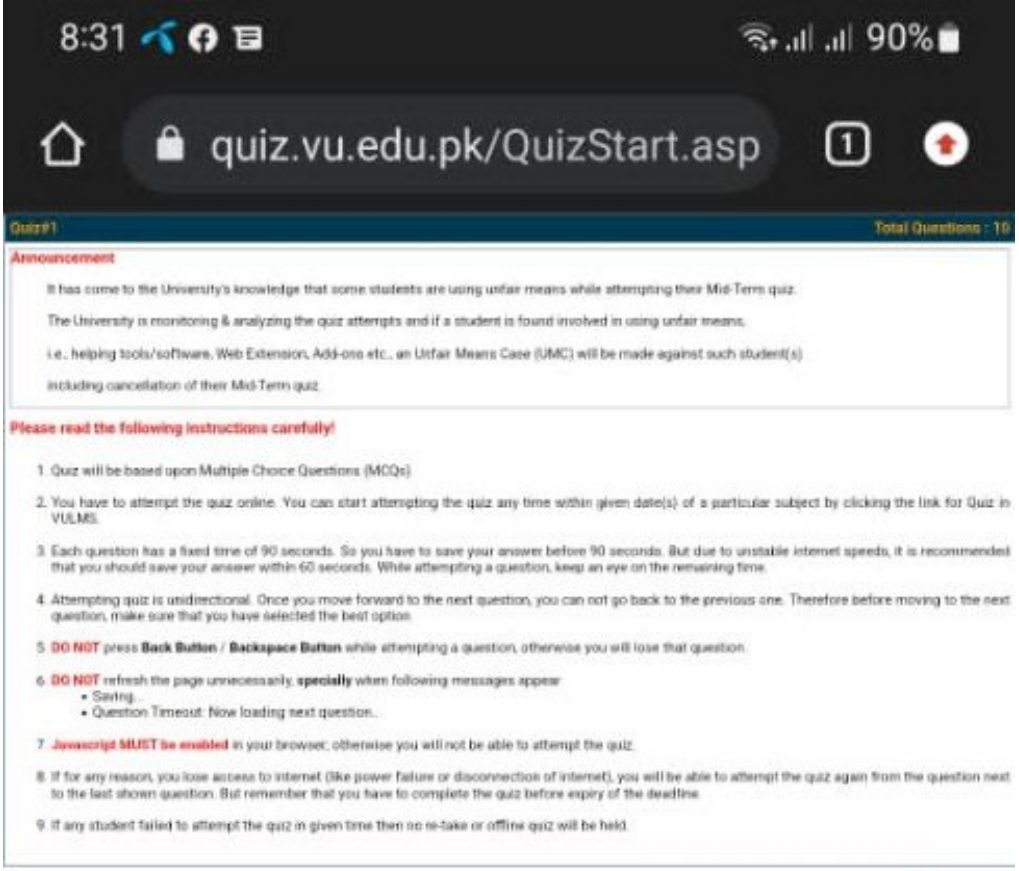
Question # 8 of 10 (Start time: 08:30:43 PM, 17 June 2022) Total Marks: 1

A differentiable function of two variables might have a _____ point.

Select the correct option

- final
- saddle
- inflection
- initial

Click to Save Answer & Move to Next Question


8:31
90%
quiz.vu.edu.pk/QuizStart.asp
Quiz#1
Total Questions : 10
Announcement
It has come to the University's knowledge that some students are using unfair means while attempting their Mid-Term quiz.
The University is monitoring & analyzing the quiz attempts and if a student is found involved in using unfair means,
i.e., helping tools/software, Web Extension, Add-ons etc., an Unfair Means Case (UMC) will be made against such student(s)
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3. Each question has a fixed time of 90 seconds. So you have to save your answer before 90 seconds. But due to unstable internet speeds, it is recommended that you should save your answer within 60 seconds. While attempting a question, keep an eye on the remaining time.
4. Attempting quiz is unidirectional. Once you move forward to the next question, you can not go back to the previous one. Therefore before moving to the next question, make sure that you have selected the best option.
5. DO NOT press Back Button / Backspace Button while attempting a question, otherwise you will lose that question.
6. DO NOT refresh the page unnecessarily, specially when following messages appear
• Saving...
• Question Timeout: Now loading next question..
7. Javascript MUST be enabled in your browser, otherwise you will not be able to attempt the quiz.
8. If for any reason, you lose access to internet (like power failure or disconnection of internet), you will be able to attempt the quiz again from the question next to the last shown question. But remember that you have to complete the quiz before expiry of the deadline.
9. If any student failed to attempt the quiz in given time then no re-take or offline quiz will be held.
Start Quiz

8:31

1.0 K/s 67

Quiz
quiz.vu.edu.pk

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

correct option

$$y - y_0 = m(x - x_0)$$

$$y + y_0 = m(x + x_0)$$

$$y = mx + c$$

$$y = mx.c$$

Click to Save Answer & Mo

8:32

4G 1.3 K/s 67

Quiz
quiz.vu.edu.pk

t time: 08:32:22 PM, 17 June 2022)

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

$f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) \geqslant f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) \leqslant f(x, y)$ for all $(x, y) \in D$

8:35 31%
quiz.vu.edu.pk/QuizQuestion

BC200403991 | JUNAID ALI

Time Left 90 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:35 PM, 17 June 2022

Question # 1 of 10 (Start time: 08:35:45 PM, 17 June 2022) Total Marks: 1

The function decreases most rapidly in the direction of

Select the correct option

Reload Math Equations

- $-\nabla f \times \hat{u}$
- $-\nabla f$
- ∇f
- $-|\nabla f|$

Processing math: 100%

8:36 31%
quiz.vu.edu.pk/QuizQuestion
4

e: 08:35:45 PM, 17 June 2022)

The function decreases most rapidly in the direction of

$-\nabla f \times \widehat{u}$

$-\nabla f$

$|\nabla f|$

$-|\nabla f|$

Click to Save Answ

8:37 30%
quiz.vu.edu.pk/QuizQuestion

BC200403991 : JUNAID ALI

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:35 PM, 17 June 2022

Question # 3 of 10 (Start time: 08:37:22 PM, 17 June 2022)

Total Marks: 1

\[
{\text{Given a surface }}f(x,{\text{ }}y,{\text{ }}z) = 0.{\text{ The direction ratios of a line normal to the surface are }} {\text{. }}{\text{. }}{\text{. }}{\text{. }}{\text{. }}{\text{. }}
\]

Select the correct option

- \[f_{xx} ,{\text{ }}f{}_{yy},{\text{ }}f{}_{zz} \]
- \[f_x ,{\text{ }}f{}_y,{\text{ }}f{}_z \]
- \[f(0),{\text{ }}f(0),{\text{ }}f(0) \]
- \[f(x),{\text{ }}f(y),{\text{ }}f(z) \]

8:38 30%
quiz.vu.edu.pk/QuizQuestion

A continuous function on a set that is not closed and bounded need not have any _____.

Select the correct option

- relative extrema
- absolute extrema

8:39 30%
quiz.vu.edu.pk/QuizQuestion

Question # 5 of 10 (Start time: 08:39:41 PM, 17 June 2022) Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

- initial
- final
- inflection
- saddle

8:40 30%
quiz.vu.edu.pk/QuizQuestion
1: JUNAID ALI
Quiz Start Time: 08:35
10 (Start time: 08:40:27 PM, 17 June 2022)

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

ect option

$y + y_0 = m(x + x_0)$

$y - y_0 = m(x - x_0)$

$y = m\,x.c$

$y = m\,x + c$

8:41 29%
quiz.vu.edu.pk/QuizQuestion

Quiz Start Ti

8:41:21 PM, 17 June 2022)

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

parametric vector

explicit

implicit

parametric

Click to Save Answer

8:42 29%
quiz.vu.edu.pk/QuizQuestion

BC200403991 : JUNAID ALI

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:35 PM, 17 June 2022

Question # 9 of 10 (Start time: 08:42:54 PM, 17 June 2022)

Total Marks: 1

The absolute maximum is also called local maximum.

Select the correct option

- True
- False

8:43 29%
quiz.vu.edu.pk/QuizQuestion
5

Quiz Start Time: 0

(Start time: 08:43:46 PM, 17 June 2022)

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

ption

$f'(x)dx$

$f'(x)\ x$

$f'(x)dy$

$f'(x)$

Click to Save Answer & Move

8:45

quiz.vu.edu.pk/Qu

Quiz#1 — Total Questions : 10

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   - Saving...
   - Question Timeout. Now loading next question...
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Start Quiz

Different forms of equation of straight line in two dimensional space

1. **Slope intercept form of the Equation of a line**

$$y = mx + c$$

where m is the slope and c is y intercept

BC200404637: FATIMA ASHRAF

Time Left 88 SEC(S)

MTH201:Quiz#1

Quiz Start Time: 08:45 PM, 17 June 2022

Question # 2 of 10 (Start time: 08:46:07 PM, 17 June 2022)

Total Marks: 1

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_0) and radius r such that - - - - - - - -

Select the correct option

Reload Math Equations

- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$

FATIMA ASHRAF

MTH201:Quiz#1

Time Left 82

Quiz Start Time: 08:45 PM, 17 June 2022

Question # 3 of 10 (Start time: 08:46:59 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point$(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -2$and$f_{xy}(0, 2) = -2$ so$D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 0$

Select the correct option

Reload Math Equations

- then f has a saddlepoint at$(0, 2)$.
- then f has a relative minimum at$(0, 2)$.
- then no conclusion can be drawn.
- thenf has a relative maximum at$(0, 2)$.

8:48

quiz.vu.edu.pk/Qu

MTH201:Quiz#1 Quiz Start Time: 08:46 PM, 17 June 20

Question # 2 of 10 (Start time: 08:47:54 PM, 17 June 2022) Total Marks

Let f be a function of two variables at a critical point $(0,2)$, $f_{xx}(0,2) = -2, f_{yy}(0,2) = -1 \text{and} f_{xy}(0,2) = 0$
so $D = f_{xx}(0,2)f_{yy}(0,2) - f^2{}_{xy}(0,2) = 2$

Select the correct option

Reload Math Equation

- then f has a relative minimum at $(0,2)$.
- then f has a relative maximum at $(0,2)$.
- then f has a saddlepoint at $(0,2)$.
- then no conclusion can be drawn.

Click to Save Answer & Move to Next Question

8:49

95 B/s

Aneeza online

MTH201 Quiz#1

Quiz Start Time: 08:46 PM, 17 June 2022

Question # 3 of 10 (Start time: 08:49:12 PM, 17 June

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) > f(x, y)$ for all $(x, y) \in D$

8:51

quiz.vu.edu.pk/Qu

5



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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and f

Select the correct option

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

LMS LMS

8:51

quiz.vu.edu.pk/Qu

5



LMS LMS

8:52

quiz.vu.edu.pk/Qu

5



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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y_0)$

select the correct option

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

8:54

339 B/s

quiz.vu.edu.pk/Qu

5

MTH201:Quiz#1 Quiz Start Time: 08:46 PM, 17 Ju

Question # 5 of 10 (Start time: 08:53:53 PM, 17 June 2022) Total

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
- 1
- 7
- 5

8:55

quiz.vu.edu.pk/Qu

BC200416627: MAHAM TARIQ

Time Left 74 min(s)

MTH201:Quiz#1

Quiz Start Time: 08:46 PM, 17 June 2022

Question # 6 of 10 (Start time: 08:54:46 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(1,0)$. $f_{xx}(1,0) = 4$, $f_{yy}(1,0) = 2$ and $f_{xy}(1,0) = 0$ and $D = f_{xx}(1,0)f_{yy}(1,0) - f^2_{xy}(1,0) = 8$

Select the correct option

Reload Math Equations

- then f has a relative maximum at $(1,0)$.
- then f has a relative minimum at $(1,0)$.
- then no conclusion can be drawn.
- then f has a relative maximum at $(1,0)$.

LMS LMS

8:56

quiz.vu.edu.pk/Qu

BC200416627: MAHAM TARIQ

Time Left 84 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:46 PM, 17 June 2022

Question # 7 of 10 (Start time: 08:56:03 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Zero vector
- Zero scalar

8:58

403 B/s

quiz.vu.edu.pk/Qu

5

BC200416627: MAHAM TARIQ

Time Left 81 min(s)

MTH201:Quiz#1

Quiz Start Time: 08:46 PM, 17 June 2022

Question # 8 of 10 (Start time: 08:57:21 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$

8:59

quiz.vu.edu.pk/Qu

Question # 9 of 10 (Start time: 08:58:31 PM, 17 June 2022)

Total Marks: 1

Two surfaces are said to be orthogonal at the point of their intersection if their normals at that point are ---------

Select the correct option

- Overlapping
- in opposite direction
- Perpendicular
- Parallel

Save Answer & Move to Next Question

9:00

quiz.vu.edu.pk/Qu

BC200416627: MAHAM TARIQ

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 08:46 PM, 17 June 2022

Question # 10 of 10 (Start time: 08:59:26 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- parametric vector
- explicit
- parametric
- implicit

9:00 PM 88%

quiz.vu.edu.pk

Question # 1 of 10 (Start time: 09:01:34 PM, 17 June 2022)

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
- Direction perpendicular to
- Arbitrary direction

Search...

9:00 PM 88%

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MTH201:Quiz#1 Quiz Start Time: 09:

Question # 2 of 10 (Start time: 09:02:22 PM, 17 June 2022)

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

Select the correct option

- parametric vector
- explicit
- parametric
- implicit

Click to Save Answer & Move to

Search...

9:01 PM 88%

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#1 Quiz Start Time: 09:01 PM, 17

f 10 (Start time: 09:03:07 PM, 17 June 2022) To

Let f be a function of two variables at a critical point$(0,2)$, $f_{xx}(0,2) = -2, f_{yy}(0,2) = -1 \text{and} f_{xy}(0,2) = 0$ so$D = f_{xx}(0,2)f_{yy}(0,2) - f^2{}_{xy}(0,2) = 2$

rect option

Reload Mat

then no conclusion can be drawn.

thenf has a relative maximum at$(0,2)$.

then f has a relative minimum at$(0,2)$.

then f has a saddlepoint at$(0,2)$.

Click to Save Answer & Move to Next Que

Search...

9:02 PM 87%

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Quiz Start Time: 09:01 PM, 17 June 2022

2022) Total Marks: 1

cond order partial derivatives in some circle centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D = 0$, then - - - - - - - - -

Reload Math Equations

$f(x, y)$ has a relative minimum at (x_0, y_0).

No conclusion can be drawn.

$f(x, y)$ has a saddle point at (x_0, y_0).

$f(x, y)$ has a relative maximum at (x_0, y_0).

Search...

9:03 PM 87%

quiz.vu.edu.pk

01:Quiz#1 Quiz Start Time: 09:01 PM, 17 J

on # 5 of 10 (Start time: 09:05:11 PM, 17 June 2022) Tota

The del operator is defined as

the correct option

Reload Math

$$\nabla \equiv \frac{\partial}{\partial x}i + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}k$$

$$\nabla \equiv -\frac{\partial}{\partial x}i - \frac{\partial}{\partial y}j - \frac{\partial}{\partial z}k$$

$$\nabla \equiv \frac{\partial}{\partial x}k + \frac{\partial}{\partial y}j + \frac{\partial}{\partial z}i$$

$$\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$$

Click to Save Answer & Move to Next Questi

Search...

9:06 86%
quiz.vu.edu.pk/QuizQuestion

BC200401688: TAWSEEF ZAMAN KHAN

Time Left 84 sec(s)

MTH201:Quiz#1

Quiz Start Time: 09:05 PM, 17 June 2022

Question # 1 of 10 (Start time: 09:05:59 PM, 17 June 2022)

Total Marks: 1

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

Reload Math Equations

- $if\ D > 0 and f_{xx}(x_0, y_0) > 0$, then no conclusion can be drawn.
- $if\ D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at (x_0, y_0).
- $if\ D > 0 and f_{xx}(x_0, y_0) > 0$, then 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).

9:04 PM 87%

quiz.vu.edu.pk

Quiz Start Time: 09:01 PM, 17 Ju

0 (Start time: 09:06:09 PM, 17 June 2022)

Total M

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

t option

Reload Math Eq

$f_x = 2x, f_y = 2y$and $f_z = 6z$

$f_x = 2x, f_y = 2$and $f_z = 6z$

$f_x = 2x, f_y = 2$and $f_z = -6z$

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

Click to Save Answer & Move to Next Question

Search...

GBWhatsApp 9:07 PM
GBWhatsApp new notifications
quiz.vu.edu.pk/QuizQue:

BC200404342: AMBREEN ATTAULLAH

Time Left 89 sec(s)

MTH301:Quiz#1

Quiz Start Time: 09:02 PM, 17 June 2022

Question # 7 of 10 (Start time: 09:07:13 PM, 17 June 2022)

Total Marks: 1

Geometrically the magnitude of Scalar Triple Product gives the----------.

Select the correct option

- Volume of Parallelepiped
- Volume of Sphere
- Area of Triangle
- Area of Parallelogram

Click to Save Answer & Move to Next Question

9:07 86%
quiz.vu.edu.pk/QuizQuestion

BC200401888: TAWSEEF ZAMAN KHAN

Time Left 86 sec(s)

MTH201:Quiz#1

Quiz Start Time: 09:05 PM, 17 June 2022

Question # 2 of 10 (Start time: 09:07:40 PM, 17 June 2022)

Total Marks: 1

A differentiable function of two variables might have a _____ point.

Select the correct option

- initial
- inflection
- final
- saddle

Next Question

9:07 PM 86%

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BC200408273: SONIA IMTIAZ

Time Left

MTH201:Quiz#1

Quiz Start Time: 09:01 PM, 17 ..

Question # 8 of 10 (Start time: 09:08:33 PM, 17 June 2022)

Tota

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

Select the correct option

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

Click to Save Answer & Move to Next Questi

Search...

9:09 86%
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BC200401888: TAWSEEF ZAMAN KHAN

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 09:05 PM, 17 June 2022

Question # 3 of 10 (Start time: 09:09:36 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Scalar quantity
- Vector quantity

9:10 86%
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BC200401888: TAWSEEF ZAMAN KHAN

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 09:05 PM, 17 June 2022

Question # 4 of 10 (Start time: 09:10:09 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Opposite to the direction
- Direction perpendicular to
- Arbitrary direction
- Direction

9:08 PM 86%

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2200408273: SONIA IMTIAZ

Time Left 86 sec(s)

TH201:Quiz#1

Quiz Start Time: 09:01 PM, 17 June 2022

estion # 9 of 10 (Start time: 09:09:54 PM, 17 June 2022)

Total Marks: 1

If $f(x,y,z)=\frac{1}{2}x^4y^{-2}-z$then f_x, f_y andf_z are

lect the correct option

Reload Math Equations

- $f_x=4x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$
- $f_x=2x^3y^{-2}, f_y=x^4y^{-3}$and $f_z=-1$
- $f_x=4x^3y^{-2}, f_y=-2x^4y^{-3}$and $f_z=-1$
- $f_x=2x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

Click to Save Answer & Move to Next Question

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BC200404342: AMBREEN ATTAULLAH

Time Left 88 sec(s)

MTH301:Quiz#1

Quiz Start Time: 09:02 PM, 17 June 2022

Question # 10 of 10 (Start time: 09:10:06 PM, 17 June 2022)

Total Marks: 1

In the following equation of plane

$$a(x - x_0) + b(y - y_0) + c(z - z_0) = 0$$

$x_0, y_0 and z_0$ *are the coordinates of*

Select the correct option

Reload Math Equations

- the point on the plane
- the vector parallel to the plane
- the vector perpendicular to the plane
- None of these

Click to Save Answer & Move to Next Question

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Quiz Start Time: 09:01 PM, 17 June

rt time: 09:11:27 PM, 17 June 2022)

Total Mar

The gradient of a scalar function$\phi$is defined as

Reload Math Equati

$grad\phi = -\nabla f(x,y)\phi$

$grad\phi = -\nabla f(x,y)\phi$

$grad\phi = \nabla\phi$

$grad\phi = \nabla f(x,y)\phi$

Click to Save Answer & Move to Next Question

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BC200401888: TAWSEEF ZAMAN KHAN

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 09:05 PM, 17 June 2022

Question # 5 of 10 (Start time: 09:12:33 PM, 17 June 2022)

Total Marks: 1

A _____ need not be the highest point on the entire graph.

Select the correct option

- absolute minimum
- absolute maximum
- relative minimum
- relative maximum

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BC200402080: HASEEB RAFIQUE

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 1 of 10 (Start time: 10:09:01 PM, 17 June 2022)

Total Marks: 1

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_0) and radius r such that - - - - - - - -

Select the correct option

Reload Math Equations

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$

Click to Save Answer & Move to Next Question

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BC200401888: TAWSEEF ZAMAN KHAN

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 09:05 PM, 17 June 2022

Question # 6 of 10 (Start time: 09:13:07 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

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

10:08 PM ... 20.6K/s H+ 39%

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BC200402080: HASEEB RAFIQUE

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 3 of 10 (Start time: 10:10:47 PM, 17 June 2022)

Total Marks: 1

$\vec{r}(t) = 3\cos t\,\hat{i} + 3\sin t\,\hat{j},\ 0 \leq t \leq \pi$, is a _____ form of a curve in the plane.

Select the correct option

Reload Math Equations

- implicit
- parametric vector
- explicit
- parametric

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BC200402080: HASEEB RAFIQUE

Time Left 86 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 2 of 10 (Start time: 10:10:05 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $D_u f = |\nabla f| \cos 1$
- $D_u f = |\nabla f| \cos 0$
- $D_u f = |\nabla f| \cos \pi$
- $D_u f = |\nabla f| \cos \frac{\pi}{2}$

10:09 PM 22.1K/s H+ 39%

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BC200402080: HASEEB RAFIQUE

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 4 of 10 (Start time: 10:12:20 PM, 17 June 2022) Total Marks: 1

The function decreases most rapidly in the direction of

Select the correct option

Reload Math Equations

- $-|\nabla f|$
- $|\nabla f|$
- $-\nabla f$
- $-\nabla f \times \hat{u}$

10:11 PM ... 11.6K/s H+ 39%

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BC200402080: HASEEB RAFIQUE

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 6 of 10 (Start time: 10:14:27 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(1,0)$, $f_{xx}(1,0) = 4$, $f_{yy}(1,0) = 2$ and $f_{xy}(1,0) = 0$
so $D = f_{xx}(1,0)f_{yy}(1,0) - f^2{}_{xy}(1,0) = 8$

Select the correct option

Reload Math Equations

- then f has a relative maximum at $(1,0)$.
- thenf has a relative maximum at $(1,0)$.
- then f has a relative minimum at $(1,0)$.
- then no conclusion can be drawn.

10:10 PM ... 22.0K/s H+ 39%

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BC200402080: HASEEB RAFIQUE

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 5 of 10 (Start time: 10:13:11 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f'(x)dy$
- $f'(x)\ x$
- $f'(x)dx$
- $f'(x)$

10:12 PM 6.78K/s H+ 39%

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BC200402080: HASEEB RAFIQUE

Time Left 86 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 7 of 10 (Start time: 10:15:25 PM, 17 June 2022) Total Marks: 1

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 Math Equations

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

10:14 PM 17.8K/s H+ 38%

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BC200402080: HASEEB RAFIQUE

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MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 8 of 10 (Start time: 10:16:32 PM, 17 June 2022)

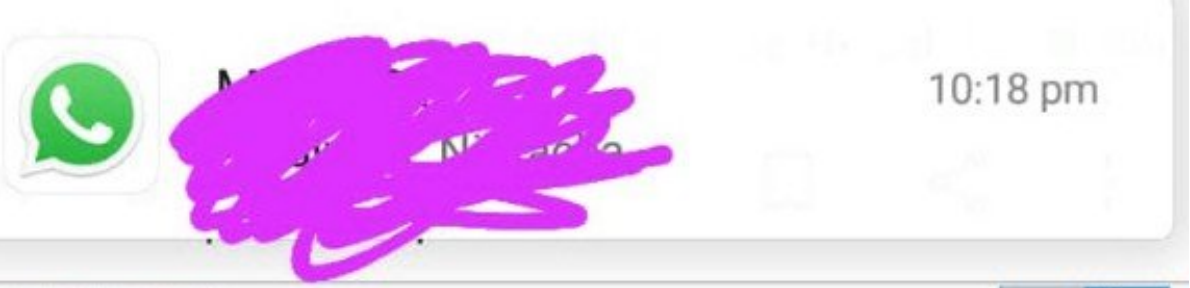
Total Marks: 1

A _____ need not be the highest point on the entire graph.

Select the correct option

- relative minimum
- absolute maximum
- absolute minimum
- relative maximum

Click to Save Answer & Move to Next Question



BC200402080: HASEEB RAFIQUE

Time Left 86 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 9 of 10 (Start time: 10:17:56 PM, 17 June 2022)

Total Marks: 1

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ---------m/s.

Select the correct option

- 5
- 7
- 1
- 12

Click to Save Answer & Move to Next Question

10:17 PM ... 13.7K/s H+ 38%

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BC200402080: HASEEB RAFIQUE

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:09 PM, 17 June 2022

Question # 10 of 10 (Start time: 10:19:36 PM, 17 June 2022)

Total Marks: 1

The gradient of a scalar function ϕ is defined as

Select the correct option

Reload Math Equations

- $grad\phi = \nabla\phi$
- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi = -\nabla f(x,y)\phi$
- $grad\phi = \nabla f(x,y)\phi$

69% 22:20

Quiz
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Let f be a function of two variables at a critical point$(0,2)$, $f_{xx}(0,2) = -2$, $f_{yy}(0,2) = -1$and$f_{xy}(0,2) = 0$ so$D = f_{xx}(0,2)f_{yy}(0,2) - f^2{}_{xy}(0,2) = 2$

correct option

Reload

thenf has a relative maximum at$(0,2)$.

then f has a relative minimum at$(0,2)$.

then f has a saddlepoint at$(0,2)$.

then no conclusion can be drawn.

Click to Save Answer & Move to Next

69% 22:22

Quiz
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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$D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

he correct option

Reload

$if D < 0$then f has a saddlepoint at(x_0, y_0).

$if D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at(x_0, y_0).

$if D \neq 0$, then no conclusion can be drawn.

$if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at(x_0, y_0).

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69% 22:24

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BC200402219: ABEEHA NOOR

Time Left 86 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:20 PM, 17 June 2022

Question # 5 of 10 (Start time: 10:24:33 PM, 17 June 2022)

Total Marks: 1

Two vectors of magnitudes [4,5] making an angle of 30degree, then the area of parallelogram associated with these two vectors is --------- square units.

Select the correct option

- 10*Sqrt(3)
- 10
- 10*Sqrt(2)
- 20*Sqrt(2)

10:30

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 80 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 1 of 10 (Start time: 10:30:35 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

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

Click to Save Answer & Move to Next Question

10:31

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 73 sec(s)

MTH201:QuizF1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 2 of 10 (Start time: 10:31:35 PM, 17 June 2022)

Total Marks: 1

The value $f(x_0, y_0)$ is a relative minimum of $f(x, y)$ on domain D, if there exists an open disc $K \subset D$ with center (x_0, y_0) and radius r such that - - - - - - - -

Select the correct option

Reload Math Equations

- $f(x_0, y_0) \geq f(x, y)$ 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 $(x, y) \in K$
- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$

Click to Save Answer & Move to Next Question

10:32 4G

Quiz
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estion # 1 of 10 (Start time: 10:32:34 PM, 17 June 2022) Total Marks:

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

ect the correct option Reload Math Equations

- $dV = yzdx + xydy + xzdz$
- $dV = xydx + xzdy + xydz$
- $dV = yzdx + xzdy + xydz$
- $dV = xzdx + xydy + xydz$

Click to Save Answer & Move to Next Question

10:32

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 3 of 10 (Start time: 10:32:36 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

Options

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

Click to Save Answer & Move to Next Question

10:33 4G

The del operator is defined as

correct option Reload Math Equ

$$\nabla \equiv \frac{\partial}{\partial x} i + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} k$$

$$\nabla \equiv \frac{\partial}{\partial x} k + \frac{\partial}{\partial y} j + \frac{\partial}{\partial z} i$$

$$\nabla \equiv -\frac{\partial}{\partial x} i - \frac{\partial}{\partial y} j - \frac{\partial}{\partial z} k$$

$$\nabla \equiv \frac{\partial}{\partial x} + \frac{\partial}{\partial y} + \frac{\partial}{\partial z}$$

Click to Save Answer & Move to Next Question

10:34

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 4 of 10 (Start time: 10:34:09 PM, 17 June 2022)

Total Marks: 1

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

Reload Math Equations

- 2
- 0
- 1
- -1

Lock to Save Answer & Move to Next Question

Question # 3 of 10 (Start time: 10:35:18 PM, 17 June 2022) Total Marks: 1

A discontinuous function on a closed and bounded set need not have any _____.

Select the correct option

- relative extrema
- absolute extrema

10:35

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 5 of 10 (Start time: 10:35:28 PM, 17 June 2022)

Total Marks: 1

A discontinuous function on a closed and bounded set need not have any _____.

Select the correct option

- relative extrema
- absolute extrema

Click to Save Answer & Move to Next Question

10:35 4G

Quiz
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n # 4 of 10 (Start time: 10:36:08 PM, 17 June 2022) Total Marks: 1

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

he correct option

Reload Math Equations

$\nabla f(x, y).\, \widehat{u}$

$\widehat{u} \times \nabla f(x, y)$

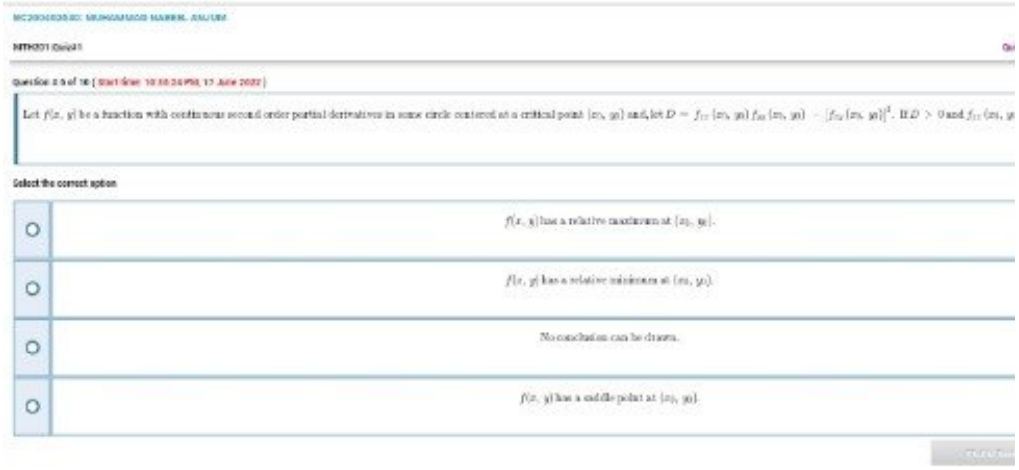
$\nabla f(x, y).\, u$

$\nabla f(x, y) \times \widehat{u}$

Click to Save Answer & Move to Next Question

10:36

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MC200400530 MUHAMMAD NABEEL ANJUM

MTH201 Quiz#1

Question # 5 of 10 (Start time: 10:30:24 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y$

Select the correct option

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

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Question # 2 of 10 (Start time: 10:36:35 PM, 17 June 2022)

Total Marks: 1

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_0) and radius r such that

Select the correct option

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) > f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \subset K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \subset K$

10:37 4G

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

ption

Reload Math Equa

$f'(x)$

$f'(x)dx$

$f'(x)\ x$

$f'(x)dy$

Click to Save Answer & Move to Next Question

10:38

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 7 of 10 (Start time: 10:38:03 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$

Click to Save Answer & Move to Next Question

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BC200402756: MUHAMMAD TAHIR

Time Left 89 sec(s)

ECO401:Quiz No.01

Quiz Start Time: 10:36 PM, 17 June 2022

Question # 2 of 10 (Start time: 10:37:33 PM, 17 June 2022)

Total Marks: 1

Rabia decides to look after her baby at home rather than going out with her friends in a park. Her dilemma is an example of:

Select the correct option

- The economic perspective.
- Marginal analysis.
- Opportunity cost.
- Allocative efficiency.

10:38

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 8 of 10 (Start time: 10:38:49 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Vector quantity
- Scalar quantity

Click to Save Answer & Move to Next Question

10:38 4G

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

the correct option

Reload Math Equations

- $D_u f = |\nabla f| \cos 1$
- $D_u f = |\nabla f| \cos \pi$
- $D_u f = |\nabla f| \cos \frac{\pi}{2}$
- $D_u f = |\nabla f| \cos 0$

Click to Save Answer & Move to Next Question

10:38 PM

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BC200402248: ADEEB UN NISA

Time Left 46 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 3 of 10 (Start time: 10:38:15 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $f_x(x)dx - f_y(x)dy$
- $f_x(x)dy - f_y(x)dx$
- $f_x(x)dy + f_y(x)dx$
- $f_x(x)dx + f_y(x)dy$

Click to Save Answer & Move to Next Question

10:39

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BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 9 of 10 (Start time: 10:39:33 PM, 17 June 2022)

Total Marks: 1

The function decreases most rapidly in the direction of

Select the correct option

Reload Math Equations

- $-\nabla f$
- $-|\nabla f|$
- $|\nabla f|$
- $-\nabla f \times \vec{u}$

Save Answer & Move to Next Question

10:40 PM

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BC200402248: ADEEB UN NISA

Time Left 72 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 4 of 10 (Start time: 10:40:05 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = 4$, $f_{yy}(0, 2) = 0$ and $f_{xy}(0, 2) = 4$
so $D = f_{xx}(0, 2) f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = -16$

Select the correct option

Reload Math Equations

- then no conclusion can be drawn.
- then f has a saddlepoint at $(0, 2)$.
- then f has a relative minimum at $(0, 2)$.
- thenf has a relative maximum at $(0, 2)$.

10:40

quiz.vu.edu.pk/Qu

BC200402640: MUHAMMAD NABEEL ANJUM

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:30 PM, 17 June 2022

Question # 10 of 10 (Start time: 10:40:19 PM, 17 June 2022)

Total Marks: 1

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ----------m/s.

Select the correct option

- 5
- 12
- 7
- 1

Click to Save Answer & Move to Next Question

10:40 4G

Quiz
quiz.vu.edu.pk

(Start time: 10:40:33 PM, 17 June 2022) Total Marks: 1

If $f(x,y,z)=\frac{1}{2}x^4y^{-2}-z$then f_x, f_y andf_z are

option

Reload Math Equations

$f_x=4x^3y^{-2}, f_y=-2x^4y^{-3}$and $f_z=-1$

$f_x=2x^3y^{-2}, f_y=x^4y^{-3}$and $f_z=-1$

$f_x=4x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

$f_x=2x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

Click to Save Answer & Move to Next Question

10:40 PM
quiz.vu.edu.pk/Qu

BC200402756: MUHAMMAD TAHIR

Time Left 87 sec(s)

ECO401:Quiz No.01

Quiz Start Time: 10:39 PM, 17 June 2022

Question # 4 of 10 (Start time: 10:41:00 PM, 17 June 2022)

Total Marks: 1

The opportunity cost of an action is:

Select the correct option

- The value of the next best alternative forgone.
- Same for everyone.
- The undesirable aspects of that action.
- The average amount of unhappiness experienced by everyone involved.

10:42 PM

quiz.vu.edu.pk/QuizQu

BC200402248: ADEEB UN NISA

Time Left 78 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 5 of 10 (Start time: 10:41:59 PM, 17 June 2022)

Total Marks: 1

A _____ need not be the highest point on the entire graph.

Select the correct option

- relative minimum
- relative maximum
- absolute minimum
- absolute maximum

Click to Save Answer & Move to Next Question

10:42 4G

Quiz
quiz.vu.edu.pk

MTH201:Quiz#1 Quiz Start Time: 10:32 PM, 17 June 2022

Question # 9 of 10 (Start time: 10:42:41 PM, 17 June 2022) Total Marks: 1

In order to find the critical points, we need to put f_x and f_y equal to - - - - - - - - - - -

Select the correct option

Reload Math Equations

- 2
- 0
- 1
- -1

Click to Save Answer & Move to Next Question

10:42 PM

quiz.vu.edu.pk/QuizQu

BC200402248: ADEEB UN NISA

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 6 of 10 (Start time: 10:42:48 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Zero scalar
- Zero vector

Save & Close Answer & Move to Next Question

10:43 PM

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3

BC200402248: ADEEB UN NISA

Time Left 82 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 7 of 10 (Start time: 10:43:16 PM, 17 June 2022)

Total Marks: 1

A differentiable function of a single variable might have a _____ point.

Select the correct option

- inflection
- final
- saddle
- initial

Click to Save Answer & Move to Next Question

10:43 PM

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BC200402248: ADEEB UN NISA

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 8 of 10 (Start time: 10:43:52 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- stationary point.
- saddle point.
- extreme point.
- initial point.

Click to Lock Answer & Move to Next Question

10:42 4G

Quiz
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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$D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

the correct option

Reload Math Equat

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

Click to Save Answer & Move to Next Question

10:44 PM
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BC200402248: ADEEB UN NISA

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:35 PM, 17 June 2022

Question # 9 of 10 (Start time: 10:44:50 PM, 17 June 2022)

Total Marks: 1

If the velocity components of a bicycle are 3m/s towards east and 4m/s towards north then the speed(magnitude of velocity) is ----------m/s.

Select the correct option

- (●) 5
- ( ) 12
- ( ) 1
- ( ) 7

Click to Save Answer & Move to Next Question

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13.7 K/s

Quiz
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BC200402917: MUHAMMAD ALI

Time Left 88 sec(s)

MTH201 Quiz#1

Quiz Start Time: 10:44 PM, 17 June 2022

Question # 2 of 10 (Start time: 10:45:17 PM, 17 June 2022)

Total Marks: 1

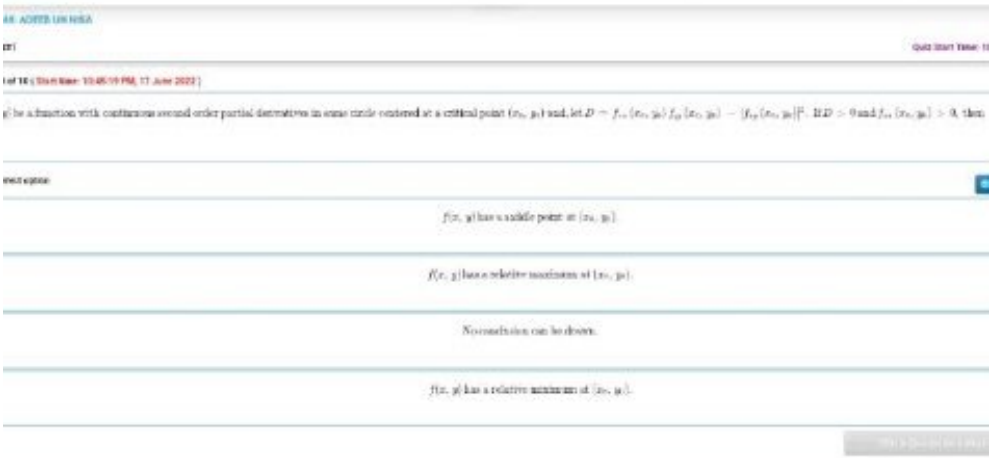
A differentiable function of a single variable might have a _____ point.

Select the correct option

- inflection
- initial
- saddle
- final

10:45 PM

quiz.vu.edu.pk/QuizQu



f be a function with continuous second order partial derivatives in some circle centered at a critical point (x_0, y_0) and, let $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y_0) > 0$, then

$f(x, y)$ has a saddle point at (x_0, y_0).

$f(x, y)$ has a relative maximum at (x_0, y_0).

No conclusion can be drawn.

$f(x, y)$ has a relative minimum at (x_0, y_0).

10:44 PM
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BC200402756: MUHAMMAD TAHIR

Time Left 86 sec(s)

ECO401:Quiz No.01

Quiz Start Time: 10:39 PM, 17 June 2022

Question # 7 of 10 (Start time: 10:45:39 PM, 17 June 2022)

Total Marks: 1

If demand for automobiles increases and the supply curve does not shift then result will be:

Select the correct option

- Higher price and no change in quantity of automobiles.
- No change in price and quantity of automobiles.
- Higher price and more quantity of automobiles.
- Higher price and lower quantity of automobiles.

77% 10:45 pm

quiz.vu.edu.pk/QuizQue:

BC200410038: ABDUL LATIF

Time Left 90 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 1 of 10 (Start time: 10:45:48 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- $D_u f = |\nabla f| \cos 1$
- $D_u f = |\nabla f| \cos \frac{\pi}{2}$
- $D_u f = |\nabla f| \cos 0$
- $D_u f = |\nabla f| \cos \pi$

Click to Save Answer & Move to Next Question

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10:46

513 B/s

Quiz
quiz.vu.edu.pk

:29 PM, 17 June 2022)

If $f(x,y,z)=\frac{1}{2}x^4y^{-2}-z$then f_x, f_y andf_z are

$f_x=2x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

$f_x=4x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

$f_x=4x^3y^{-2}, f_y=-2x^4y^{-3}$and $f_z=-1$

$f_x=2x^3y^{-2}, f_y=x^4y^{-3}$and $f_z=-1$

Click to Save

76% 10:46 pm
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BC200410038: ABDUL LATIF

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 2 of 10 (Start time: 10:46:52 PM, 17 June 2022)

Total Marks: 1

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

Select the correct option

Reload Math Equations

- $dV = xzdx + xydy + xydz$
- $dV = yzdx + xydy + xzdz$
- $dV = xydx + xzdy + xydz$
- $dV = yzdx + xzdy + xydz$

Click to Save Answer & Move to Next Question

10:48 43.0 K/s

Quiz
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AD ALI

Quiz Start Ti

e: 10:47:50 PM, 17 June 2022)

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

parametric

implicit

parametric vector

explicit

Click to Save Answer &

10:48 30.9 K/s 20

Quiz
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AD ALI

Quiz Start

: 10:48:39 PM, 17 June 2022)

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

parametric vector

implicit

explicit

parametric

Click to Save Answer

10:50

145 B/s

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BC200402917: MUHAMMAD ALI

Time Left 85

MTH201:Quiz#1

Quiz Start Time: 10:44 PM, 17 June 2022

Question # 6 of 10 (Start time: 10:49:51 PM, 17 June 2022)

Total Marks: 1

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_0) and radius r such that ----------

Select the correct option

- $f(x_0, y_0) < f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) > f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in K$
- $f(x_0, y_0) = f(x, y)$ for all $(x, y) \in K$

10:50

Quiz
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) PM, 17 June 2022)

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

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

$f_x = 2x, f_y = 2$and $f_z = -6z$

$f_x = 2x, f_y = 2y$and $f_z = 6z$

$f_x = 2x, f_y = 2$and $f_z = 6z$

Click to Save

10:52

Quiz
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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$D = f_{xx}(x_0, y_0)f_{yy}(x_0, y_0) - f^2{}_{xy}(x_0, y_0)$.

Reload

$if D > 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at(x_0, y_0).

$if D > 0 and f_{xx}(x_0, y_0) < 0$, then f has a relative minimum at(x_0, y_0).

$if D = 0$, then no conclusion can be drawn.

$if D < 0 and f_{xx}(x_0, y_0) > 0$, then f has a relative maximum at(x_0, y_0).

Click to Save Answer & Move to Next Q

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BC200410038: ABDUL LATIF

Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 3 of 10 (Start time: 10:48:31 PM, 17 June 2022)

Total Marks: 1

\[
{\text{Given a surface }}f(x,{\text{ }}y,{\text{ }}z) = 0.{\text{ The direction ratios of a line normal to the surface are }} {\text{. }}{\text{. }}{\text{. }}{\text{. }}{\text{. }}
\]

Select the correct option

- \[f(x),{\text{ }}f(y),{\text{ }}f(z) \]
- \[f_{xx} ,{\text{ }}f{}_{yy},{\text{ }}f{}_{zz} \]
- \[f(0),{\text{ }}f(0),{\text{ }}f(0) \]
- \[f_x ,{\text{ }}f{}_y,{\text{ }}f{}_z \]

Click to Save Answer & Move to Next Question

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Time Le

Quiz Start Time: 10:44 PM,

ne: 10:54:18 PM, 17 June 2022)

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

Reload M

$f(x_0, y_0) > f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) \geq f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) \leq f(x, y)$ for all $(x, y) \in D$

$f(x_0, y_0) = f(x, y)$ for all $(x, y) \in D$

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Quiz
quiz.vu.edu.pk

BC200402917: MUHAMMAD ALI

Time Left 86 sec(s)

MTH201 /Quiz#1

Quiz Start Time: 10:44 PM, 17 June 2022

Question # 9 of 10 (Start time: 10:53:49 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Zero scalar
- Zero vector

Save & Next Answer & Move to Next Question

Quiz List

Quiz

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MTH201:Quiz#1

Question # 1 of 10 (Start time: 10:54:23 PM, 17 June 2022)

A _____ need not be the highest point on the entire graph.

Select the correct option

- relative minimum
- relative maximum
- absolute minimum
- absolute maximum

Type here to search

MTH201:Quiz#1

Question # 2 of 10 (Start time: 10:55:51 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x$

Select the correct option

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

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MTH201:Quiz#1

Question # 3 of 10 (Start time: 10:57:00 PM, 17 June 2022)

Two surfaces are said to be orthogonal at the point of their intersection if their normals at that point are ———

Select the correct option

- Parallel
- in opposite direction
- Perpendicular
- Overlapping

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BC200410038: ABDUL LATIF

Time Left 87 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 4 of 10 (Start time: 10:57:28 PM, 17 June 2022)

Total Marks: 1

The absolute maximum is also called local maximum.

Select the correct option

- True
- False

Click to Save Answer & Move to Next Question

... 2 73% 10:58 pm
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Question # 5 of 10 (Start time: 10:58:22 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D < 0$, then - - -

Select the correct option

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

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

$f_x(x_0, y_0) = 0,\ f_y(x_0, y_0) = 0$

$f_x(x_0, y_0) < 0,\ f_y(x_0, y_0) < 0$

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

$f_x(x_0, y_0) > 0,\ f_y(x_0, y_0) > 0$

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

$f_x(x_0, y_0) = 0, f_y(x_0, y_0) = 0$

$f_x(x_0, y_0) < 0, f_y(x_0, y_0) < 0$

$f_x(x_0, y_0) < 0, f_y(x_0, y_0) > 0$

$f_x(x_0, y_0) > 0, f_y(x_0, y_0) > 0$

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BC200410038: ABDUL LATIF

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MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 6 of 10 (Start time: 10:59:37 PM, 17 June 2022)

Total Marks: 1

Let f be a function of two variables at a critical point $(0, 2)$, $f_{xx}(0, 2) = -2$, $f_{yy}(0, 2) = -2$ and $f_{xy}(0, 2) = -2$ so $D = f_{xx}(0, 2)f_{yy}(0, 2) - f^2{}_{xy}(0, 2) = 0$

Select the correct option

Reload Math Equations

- then f has a saddlepoint at $(0, 2)$.
- thenf has a relative maximum at $(0, 2)$.
- then no conclusion can be drawn.
- then f has a relative minimum at $(0, 2)$.

Click to Save Answer & Move to Next Question

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MTH201:Quiz#1

Quiz Start Time: 10:54 P

Question # 5 of 10 (Start time: 10:59:48 PM, 17 June 2022)

In order to find the critical points, we need to put f_x and f_y equal to ----------

Select the correct option

Reload Math

- 2
- -1
- 0
- 1

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Math 201

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REPLY MARK AS READ

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D > 0$ and $f_{xx}(x_0, y$

Select the correct option

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

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

parametric

parametric vector

implicit

explicit

... 2 73% 11:01 pm

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Time Left 89 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 8 of 10 (Start time: 11:01:15 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- Vector quantity
- Scalar quantity

Click to Save Answer & Move to Next Question

33cb2-a513-478c-b451-89b49e606b05

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

parametric

parametric vector

implicit

explicit

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Quiz Sta

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

$dV = xzdx + xydy + xydz$

$dV = yzdx + xydy + xzdz$

$dV = xydx + xzdy + xydz$

$dV = yzdx + xzdy + xydz$

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3

BC200410038: ABDUL LATIF

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 9 of 10 (Start time: 11:02:18 PM, 17 June 2022)

Total Marks: 1

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

Select the correct option

- continuous
- discontinuous
- scalar
- vector

Click to Save Answer & Move to Next Question

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Quiz Start

)

The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

$dV = xzdx + xydy + xydz$

$dV = yzdx + xydy + xzdz$

$dV = xydx + xzdy + xydz$

$dV = yzdx + xzdy + xydz$

Quiz List | Quiz

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MTH201:Quiz#1

Question # 8 of 10 (Start time: 11:03:42 PM, 17 June 2022)

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

Select the correct option

- Opposite to the direction
- Direction
- Arbitrary direction
- Direction perpendicular to

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Qu

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The volume of a rectangular parallelepiped is given by the formula $V = xyz$ then $dV =$

$dV = xzdx + xydy + xydz$

$dV = yzdx + xydy + xzdz$

$dV = xydx + xzdy + xydz$

$dV = yzdx + xzdy + xydz$

Click to Save Answer & Nex

72% 11:04 pm
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3

BC200410038: ABDUL LATIF

Time Left 88 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:45 PM, 17 June 2022

Question # 10 of 10 (Start time: 11:04:33 PM, 17 June 2022)

Total Marks: 1

If a vector of magnitude '4' is making angle 30-degree with Y-axis then its component vector along x-axis is ----------.

Select the correct option

- 2*sqrt(3)
- -2
- 2
- -2*sqrt(3)

Click to Save Answer & Move to Next Question

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If $f(x,y,z)=\frac{1}{2}x^4y^{-2}-z$then f_x, f_y andf_z are

$f_x=2x^3y^{-2}, f_y=x^4y^{-3}$and $f_z=-1$

$f_x=4x^3y^{-2}, f_y=-2x^4y^{-3}$and $f_z=-1$

$f_x=4x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

$f_x=2x^3y^{-2}, f_y=-x^4y^{-3}$and $f_z=-1$

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Qu

2022)

$\vec{r}(t) = 3\cos t\,\vec{i} + 3\sin t\,\vec{j},\ 0 \leq t \leq \pi$, is a _____ form of a curve in the plane.

explicit

implicit

parametric

parametric vector

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Qui

$\vec{r}(t) = 3\cos t\,\hat{i} + 3\sin t\,\hat{j},\ 0 \leq t \leq \pi$, is a _____ form of a curve in the plane.

explicit

implicit

parametric

parametric vector

H 4G 22:20

Quiz
quiz.vu.edu.pk

BC200401512: RIMSHA ADREES

Time Left 82 sec(s)

MTH201:Quiz#1

Quiz Start Time: 10:19 PM, 17 June 202

Question # 2 of 10 (Start time: 10:20:43 PM, 17 June 2022)

Total Marks:

If a vector of magnitude '4' is making angle 30-degree with Y-axis then its component vector along x-axis is ----------.

Select the correct option

- 2
- -2*sqrt(3)
- 2*sqrt(3)
- -2

Click to Save Answer & Move to Next Question

H 4G 22:28

Quiz
quiz.vu.edu.pk

Quiz Start Time: 10:19 PM

ime: 10:28:15 PM, 17 June 2022)

The gradient of a scalar function$\phi$is defined as

Reload

$$grad\phi = \nabla\phi$$

$$grad\phi = -\nabla f(x,y)\phi$$

$$grad\phi = \nabla f(x,y)\phi$$

$$grad\phi = -\nabla f(x,y)\phi$$

Click to Save Answer & Move to Next Q

H 4G 22:23

Quiz
quiz.vu.edu.pk

Quiz Start Time: 10:19 PM, 17 Ju

art time: 10:23:33 PM, 17 June 2022)

Total

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

on

Reload Math Ed

explicit

parametric

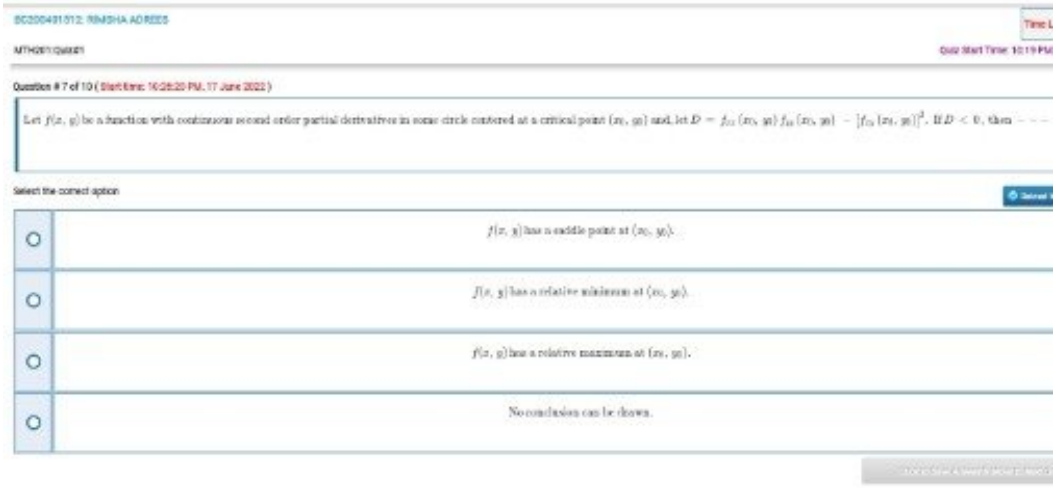
parametric vector

implicit

Click to Save Answer & Move to Next Question

H 4G 22:26

Quiz
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BC200401512: RIMSHA ADREES

MTH201 Quizzi

Question # 7 of 10 (Start time: 10:26:20 PM, 17 June 2022)

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 $D = f_{xx}(x_0, y_0) f_{yy}(x_0, y_0) - [f_{xy}(x_0, y_0)]^2$. If $D < 0$, then - - -

Select the correct option

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

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June 2022)

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

implicit

explicit

parametric vector

parametric