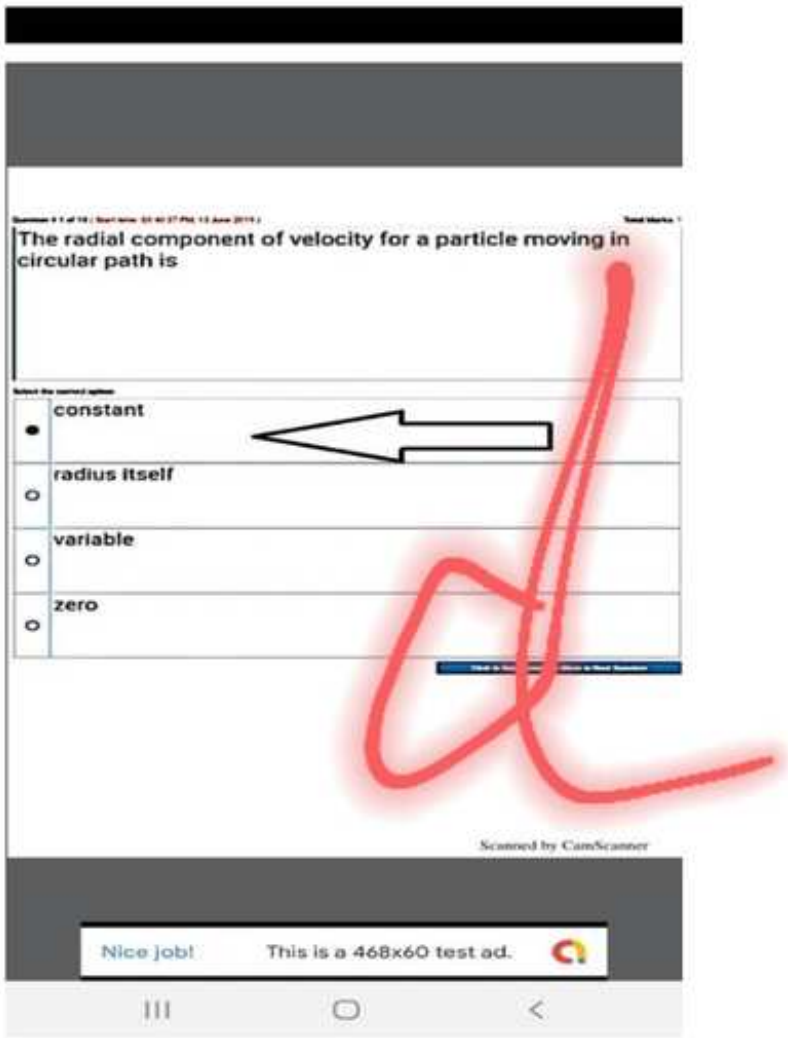


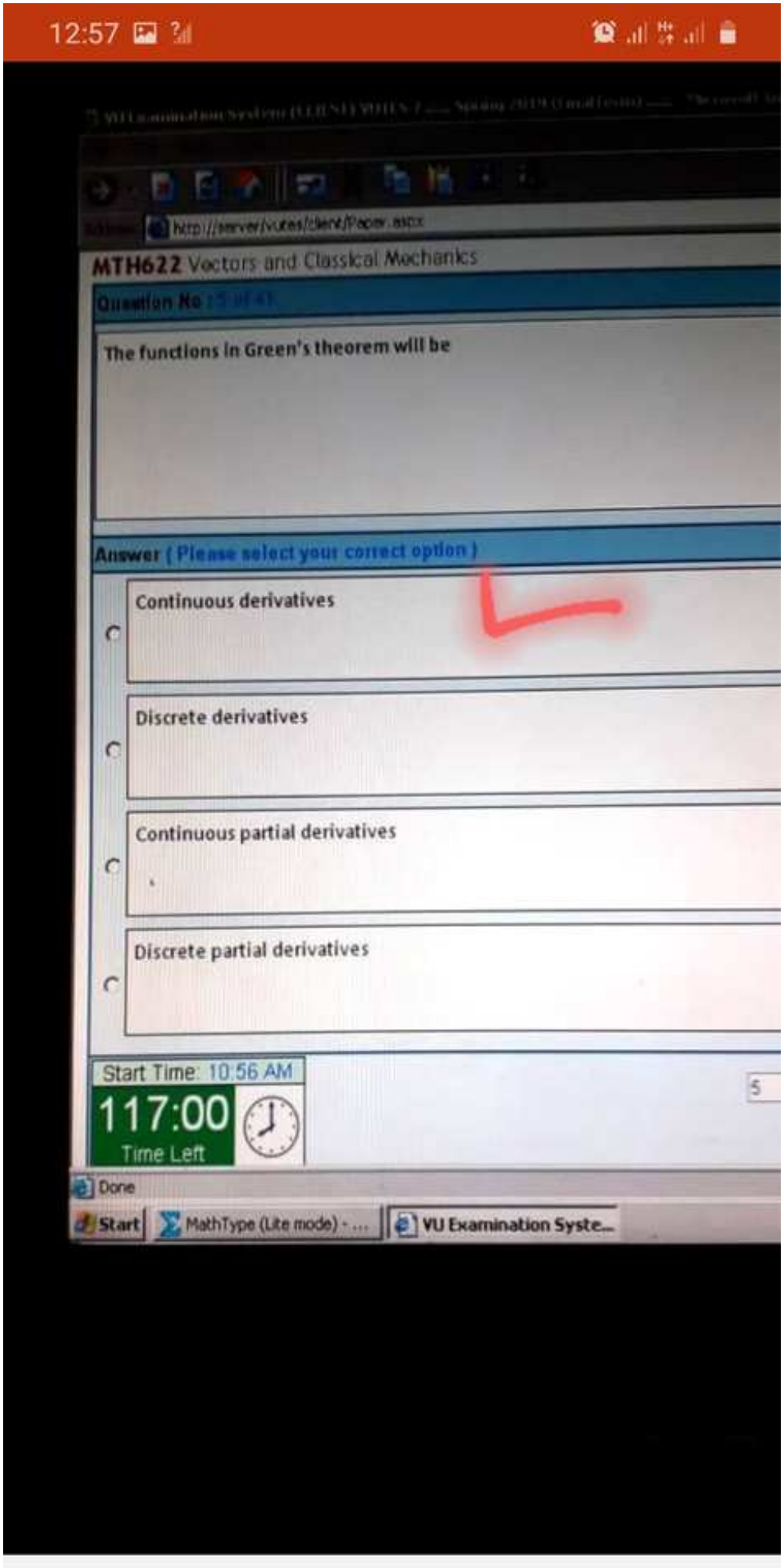
The radial component of velocity for a particle moving in circular path is

- ● constant
- ○ radius itself
- ○ variable
- ○ zero

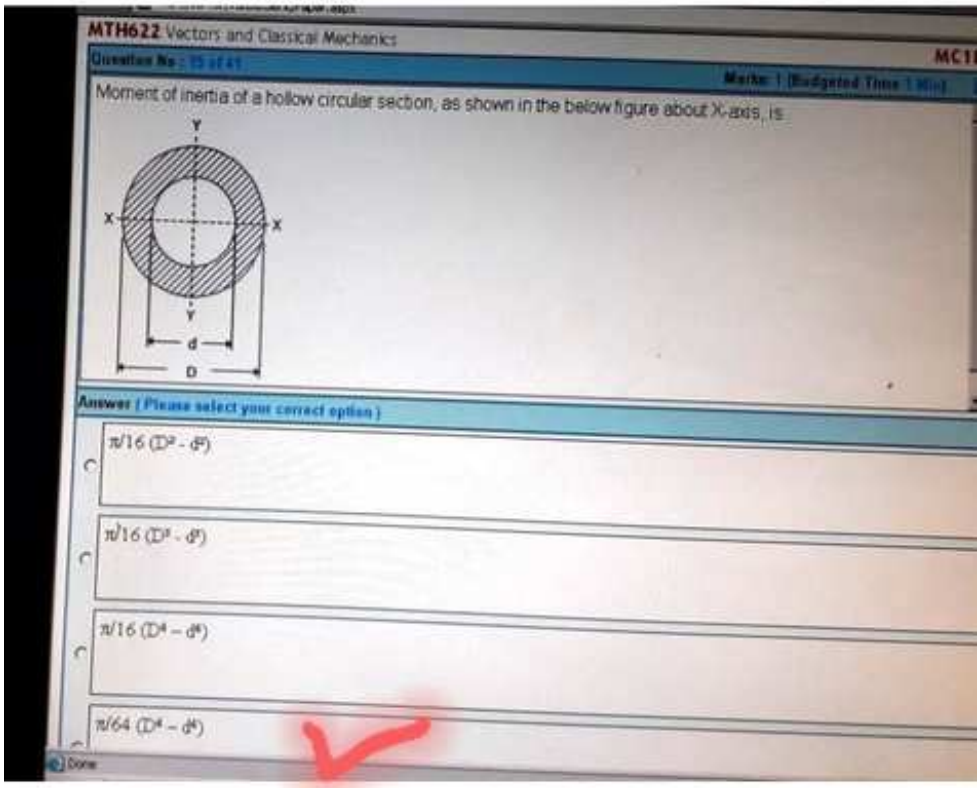
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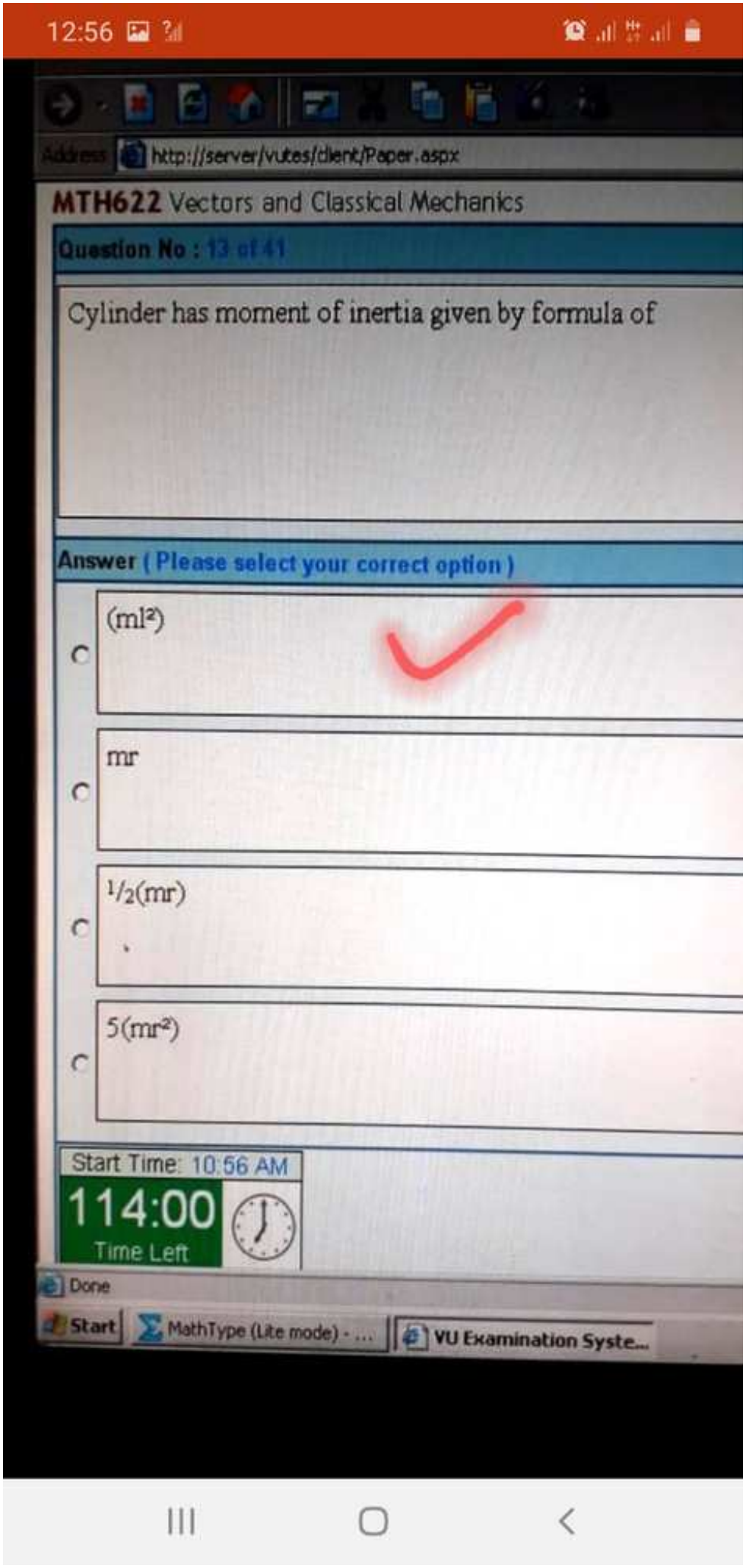
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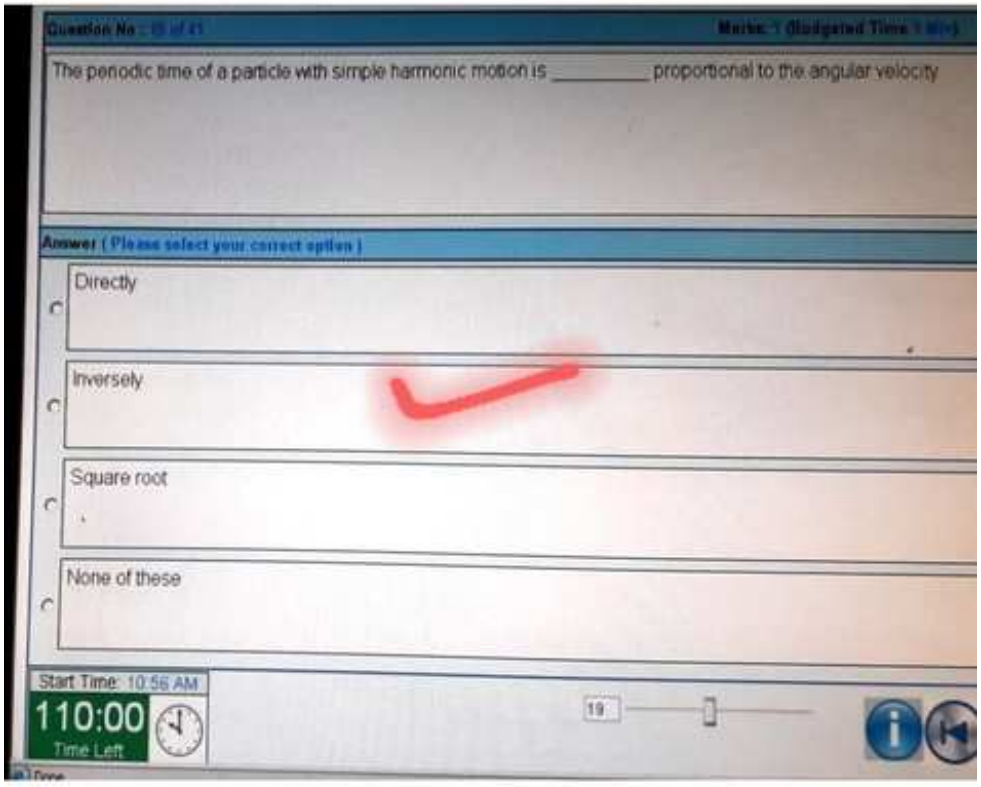
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12:57
MTH622 Vectors and Classical Mechanics
The functions in Green's theorem will be
Answer (Please select your correct option)
Continuous derivatives
Discrete derivatives
Continuous partial derivatives
Discrete partial derivatives
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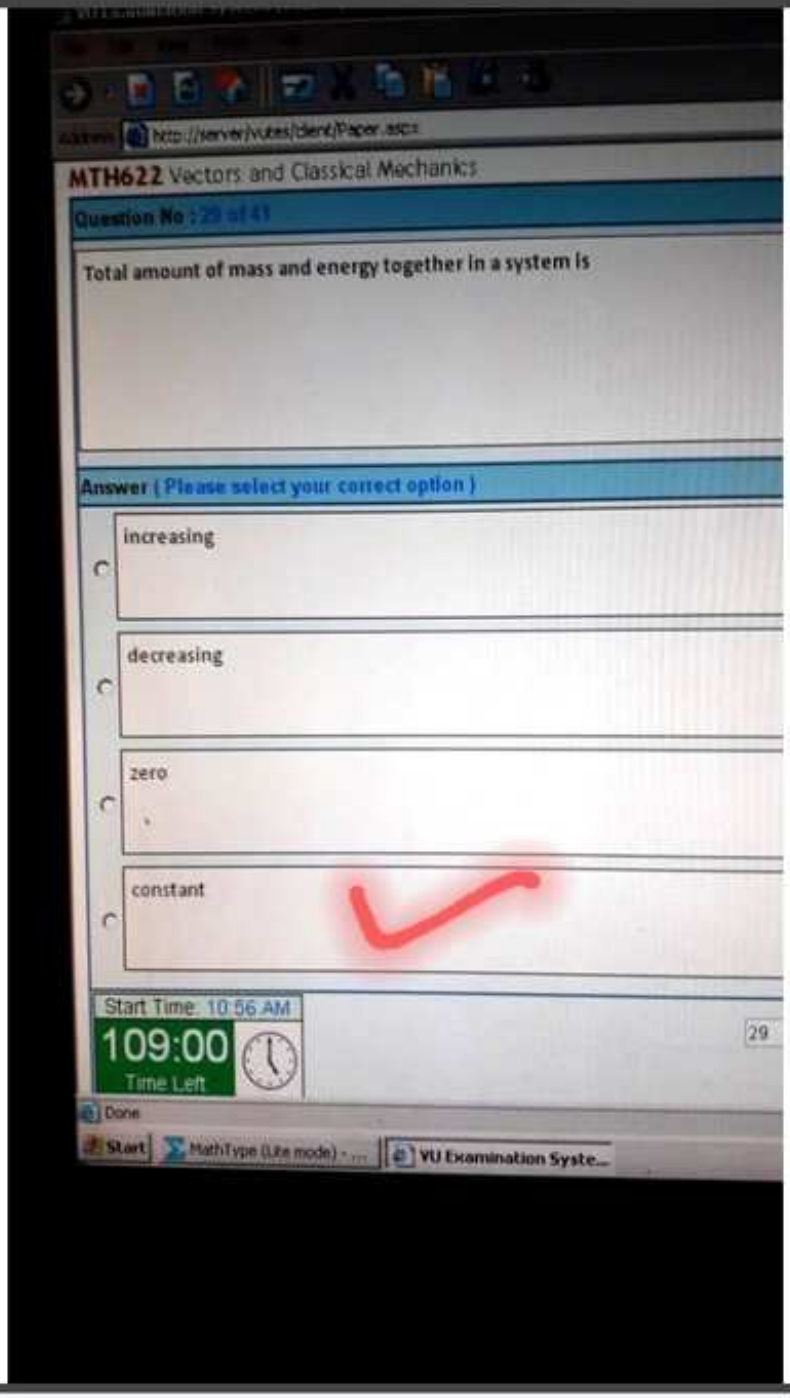
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MTH622 Vectors and Classical Mechanics
MC1
Moment of inertia of a hollow circular section, as shown in the below figure about X-axis, is
Y
X
X
Y
d
D
Answer (Please select your correct option)
π/16 (D⁴ - d⁴)
π/16 (D³ - d³)
π/16 (D⁴ – d⁴)
π/64 (D⁴ – d⁴)
Done


12:56
http://server/vutes/client/Paper.aspx
MTH622 Vectors and Classical Mechanics
Question No : 13 of 41
Cylinder has moment of inertia given by formula of
Answer (Please select your correct option)
(ml²)
mr
½(mr)
5(mr²)
Start Time: 10:56 AM
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MathType (Lite mode) - ...
VU Examination Syste...

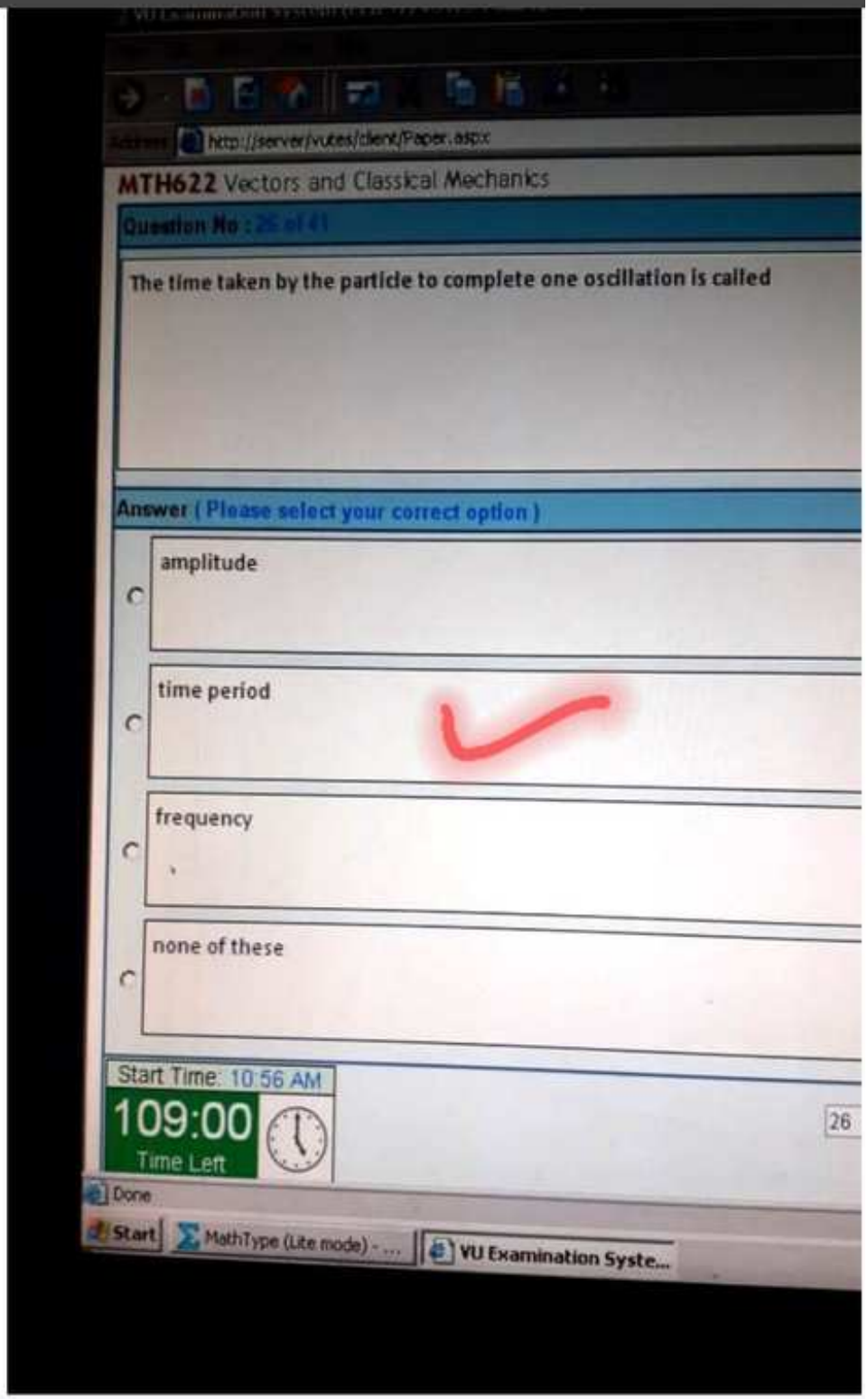

The periodic time of a particle with simple harmonic motion is _____ proportional to the angular velocity
Answer (Please select your correct option)
Directly
Inversely
Square root
None of these
Start Time: 10:56 AM
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Time Left
19

12:46

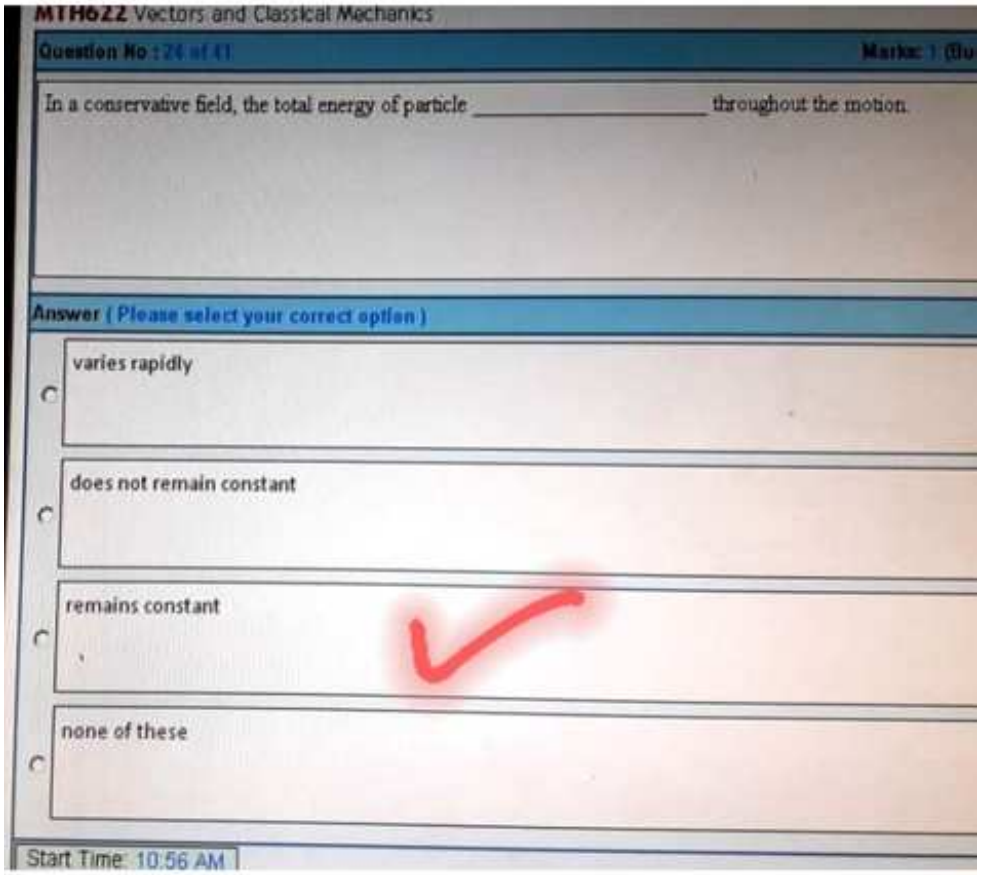


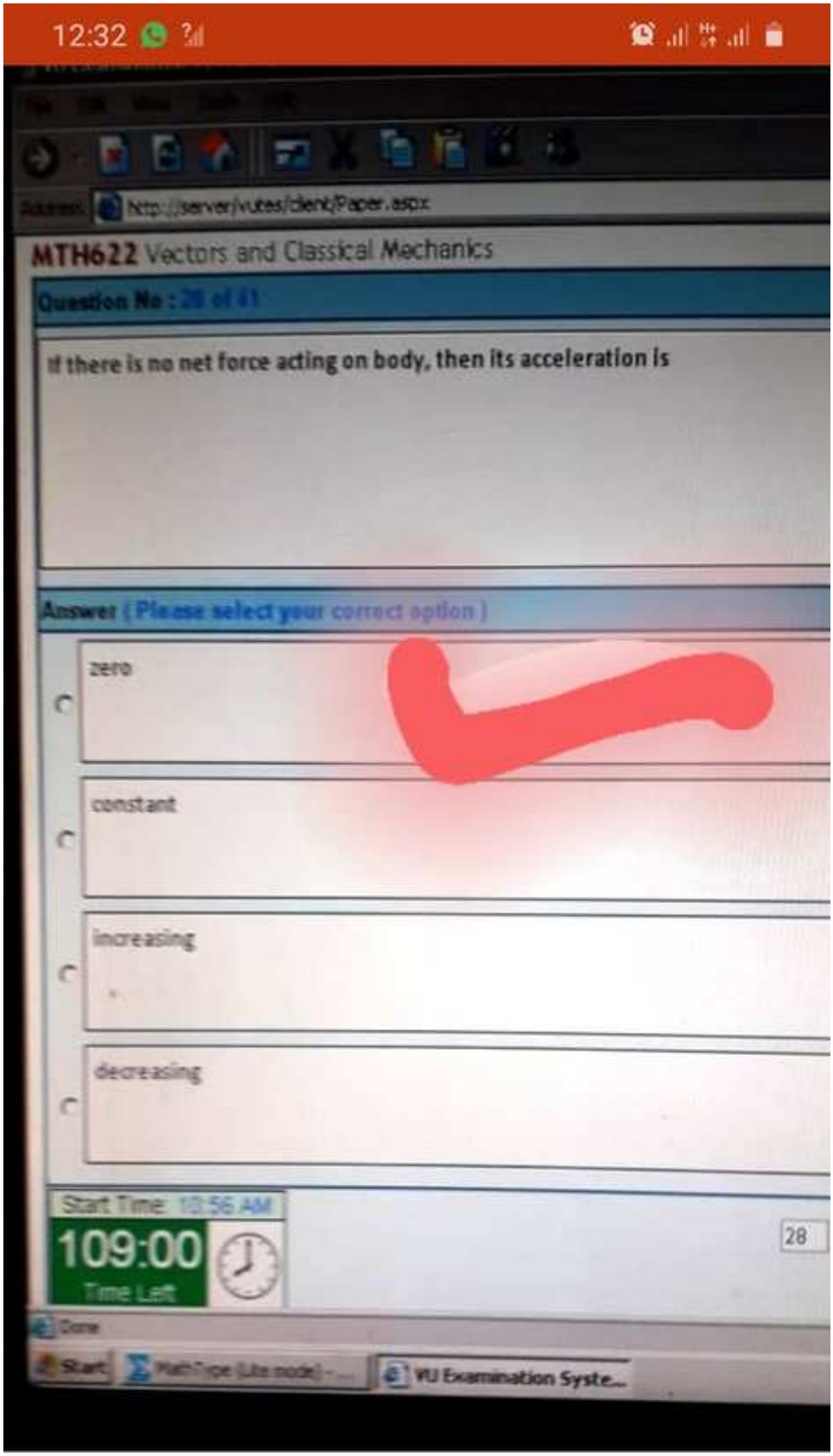
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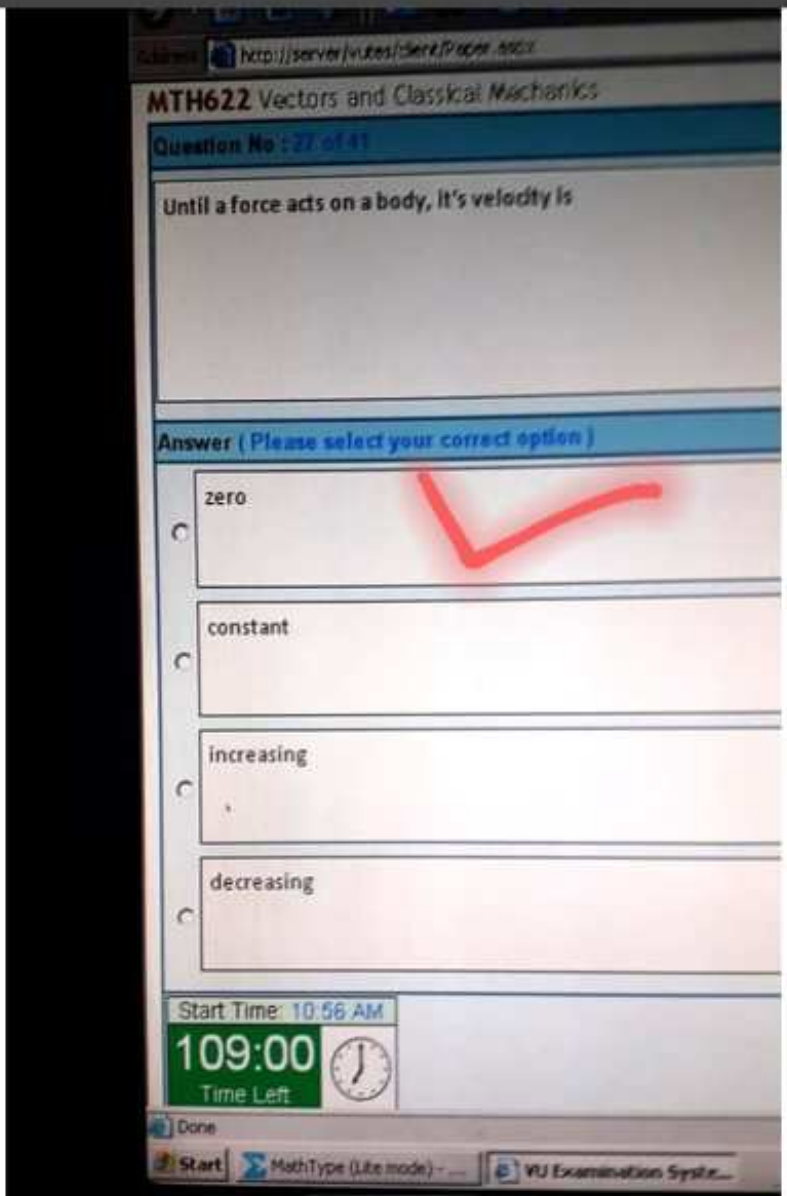
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MTH622 Vectors and Classical Mechanics
Question No : 24 of 41
Marks: 1
In a conservative field, the total energy of particle _____ throughout the motion.
Answer (Please select your correct option)
varies rapidly
does not remain constant
remains constant
none of these
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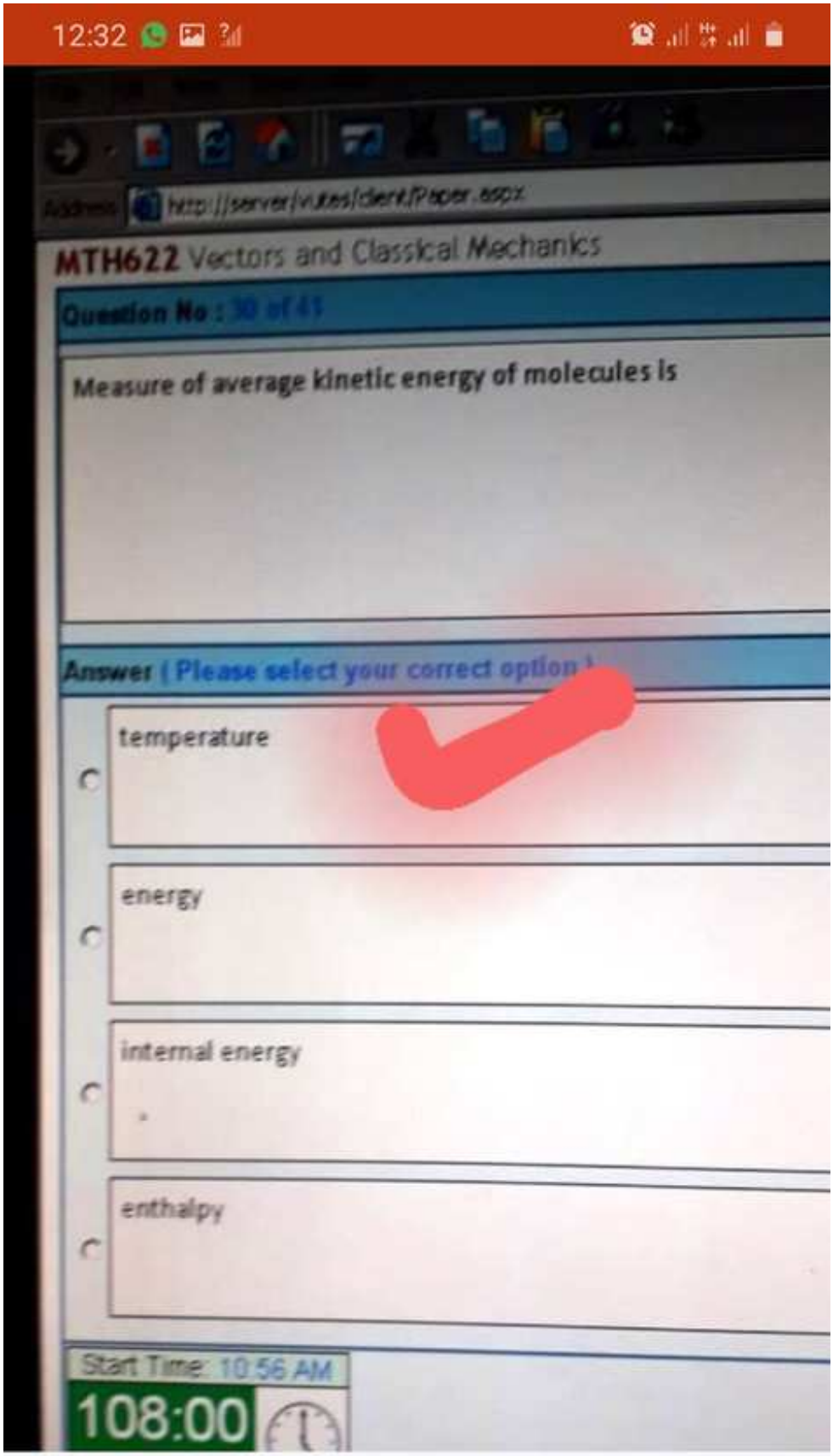


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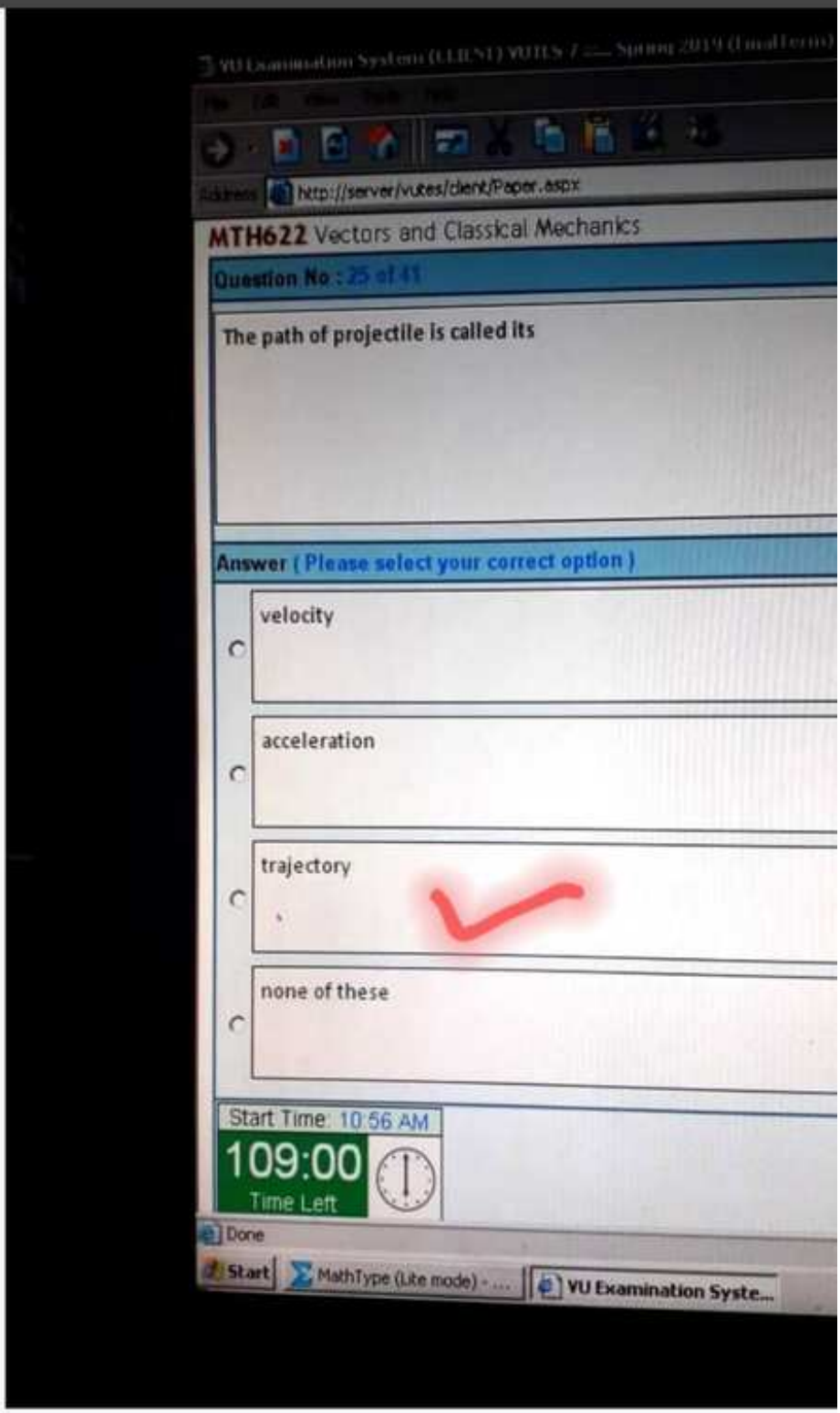


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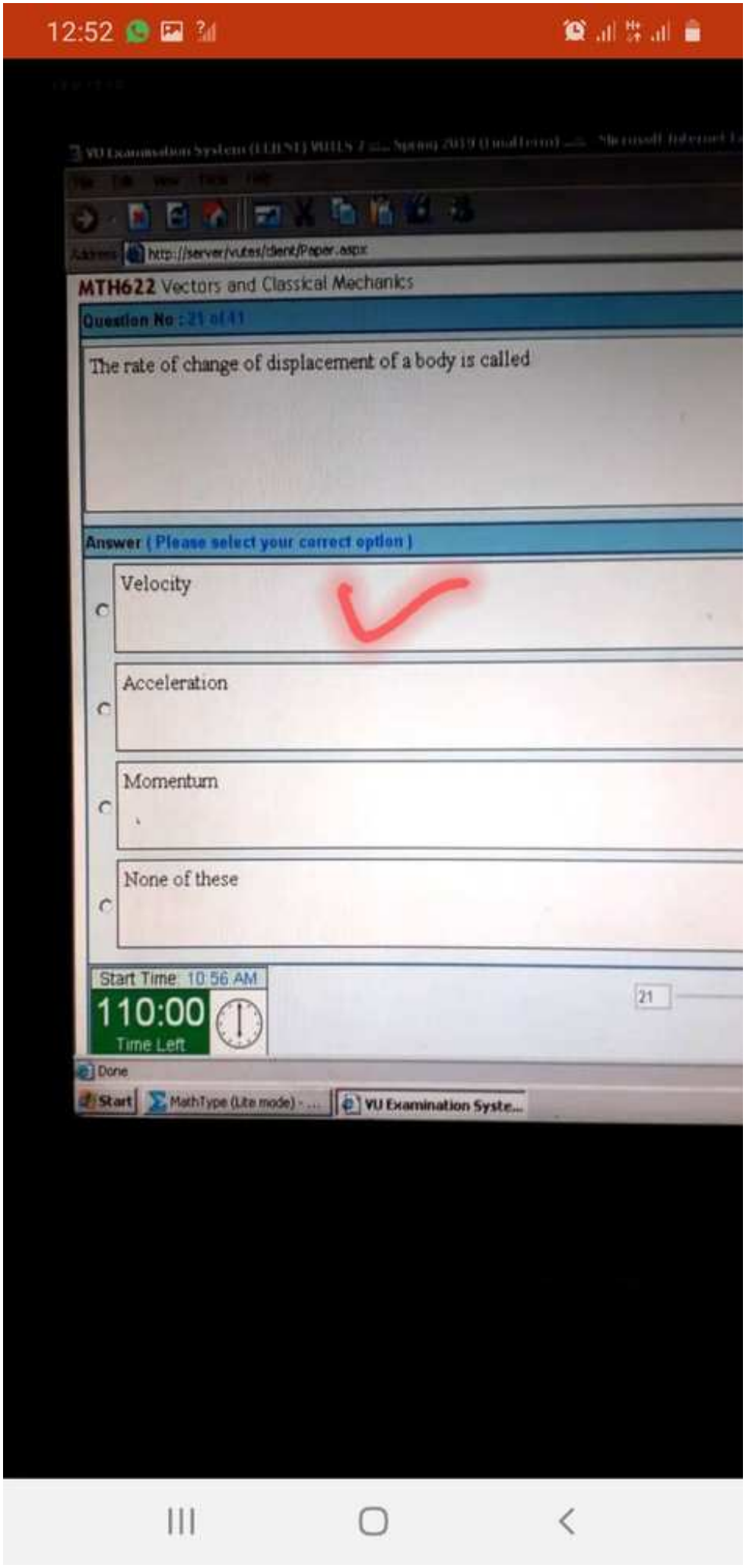


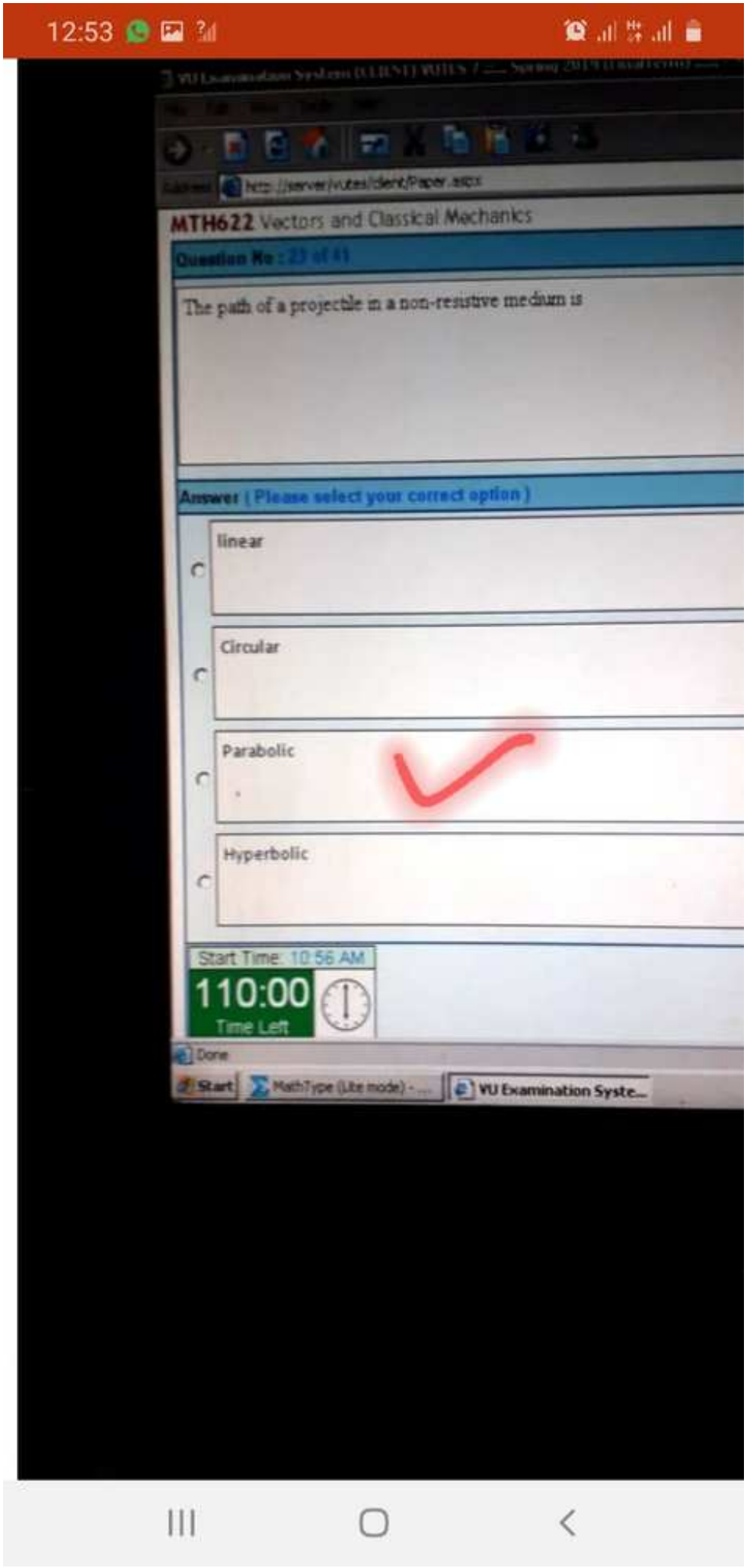
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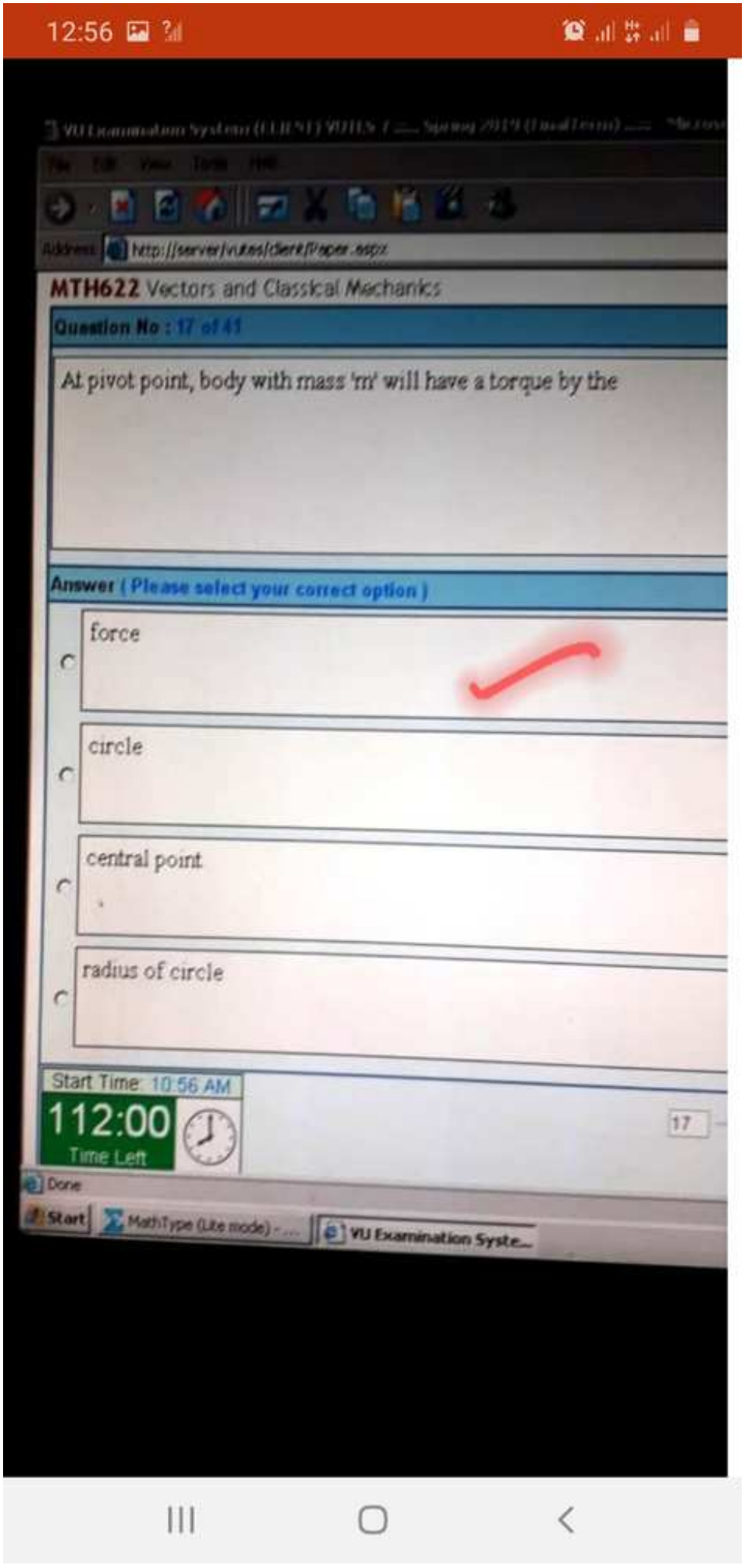
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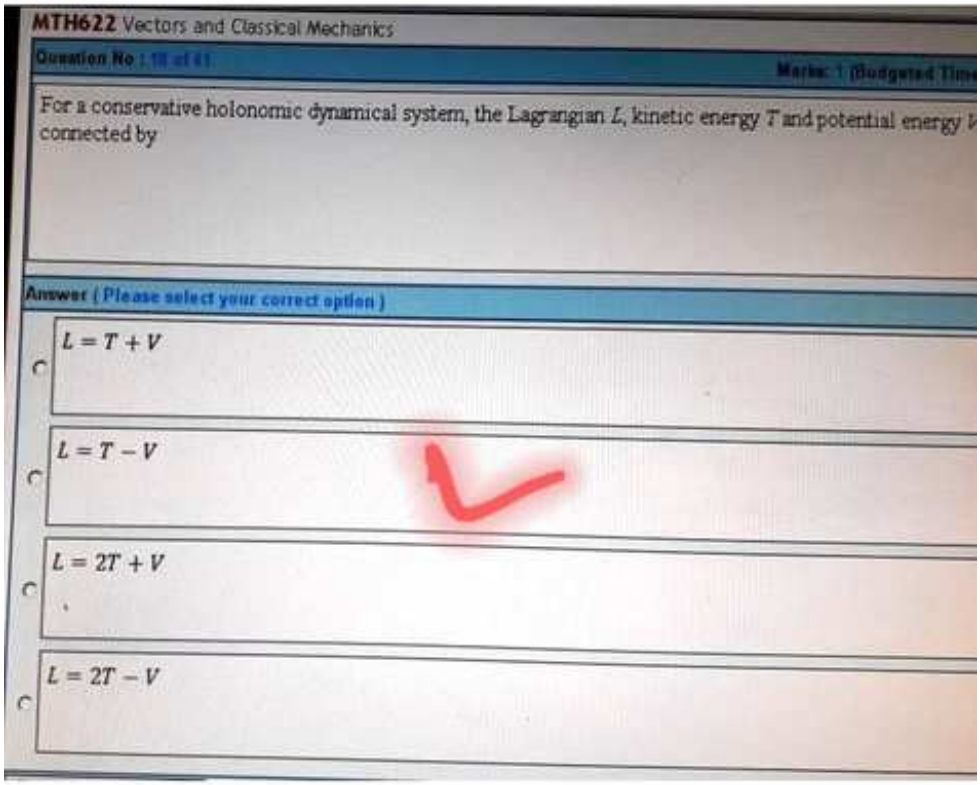
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12:52
http://server/vutes/client/Paper.aspx
MTH622 Vectors and Classical Mechanics
Question No : 21 of 41
The rate of change of displacement of a body is called
Answer (Please select your correct option)
Velocity
Acceleration
Momentum
None of these
Start Time: 10:56 AM
110:00
Time Left
21
Done
Start
MathType (Lite mode) - ...
VU Examination Syste...


12:53
MTH622 Vectors and Classical Mechanics
The path of a projectile in a non-resistive medium is
Answer (Please select your correct option)
linear
Circular
Parabolic
Hyperbolic
Start Time: 10:56 AM
110:00
Time Left
Done
Start
MathType (Lite mode) - ...
VU Examination Syste...


12:56
MTH622 Vectors and Classical Mechanics
Question No : 17 of 41
At pivot point, body with mass 'm' will have a torque by the
Answer (Please select your correct option)
force
circle
central point
radius of circle
Start Time: 10:56 AM
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17
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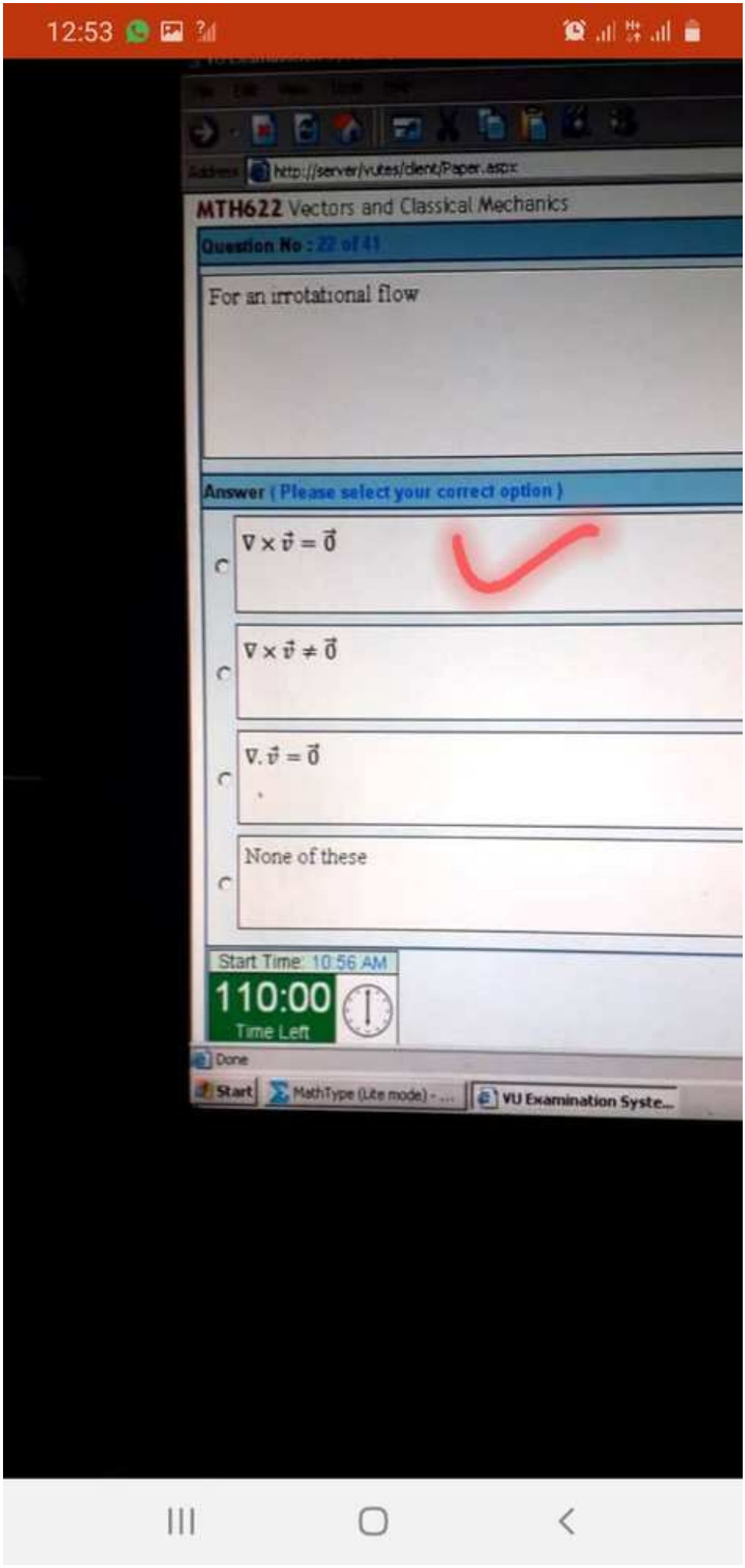
MTH622 Vectors and Classical Mechanics

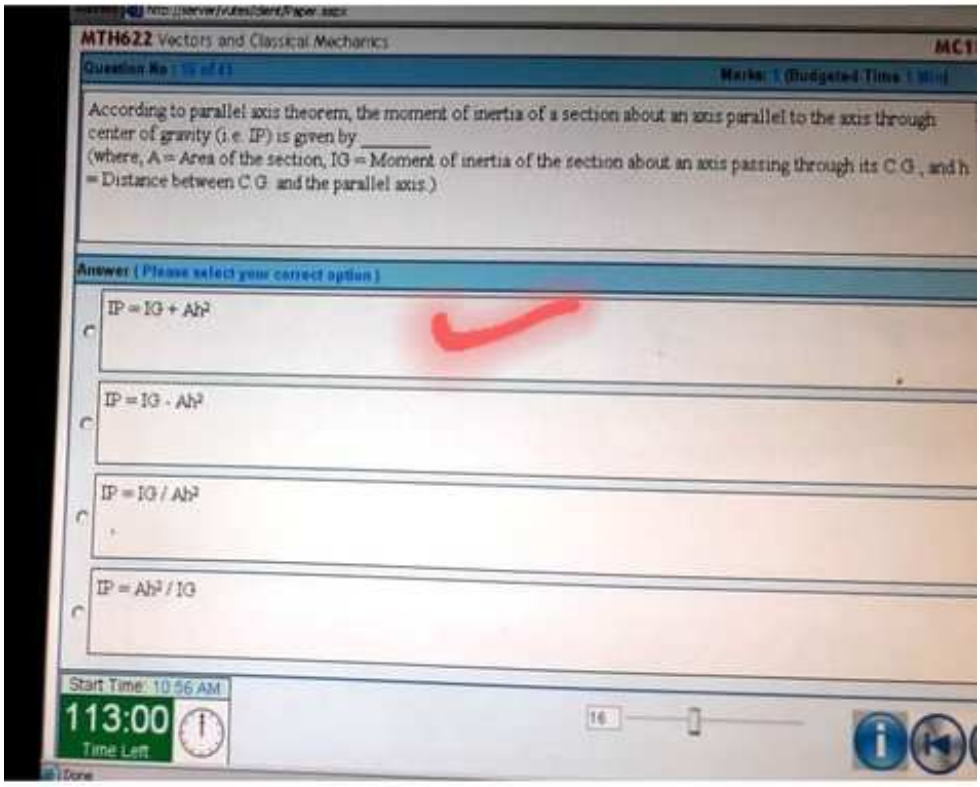
Question No : 18 of 41 Marks: 1 (Budgeted Time

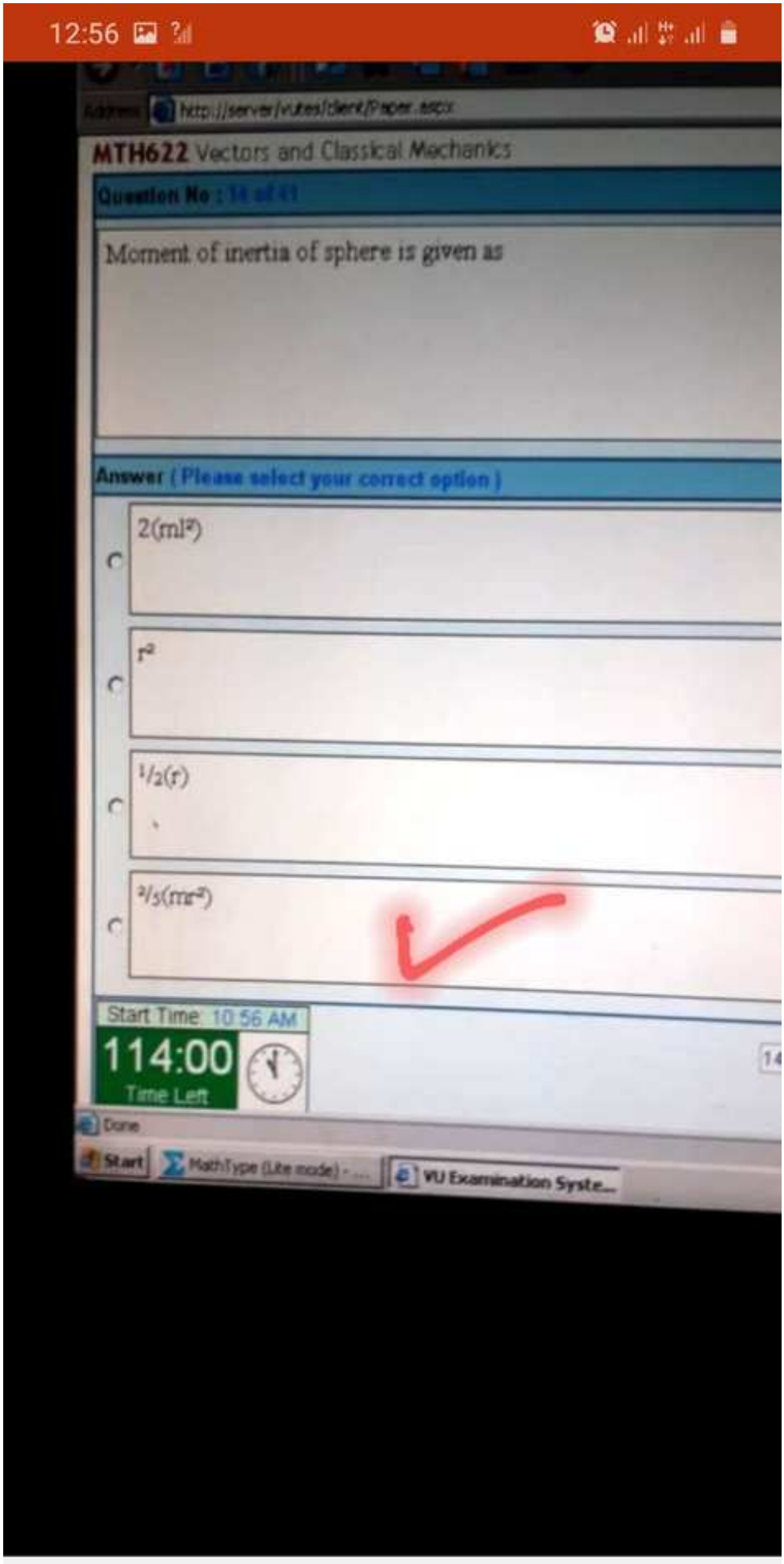
For a conservative holonomic dynamical system, the Lagrangian L, kinetic energy T and potential energy V connected by

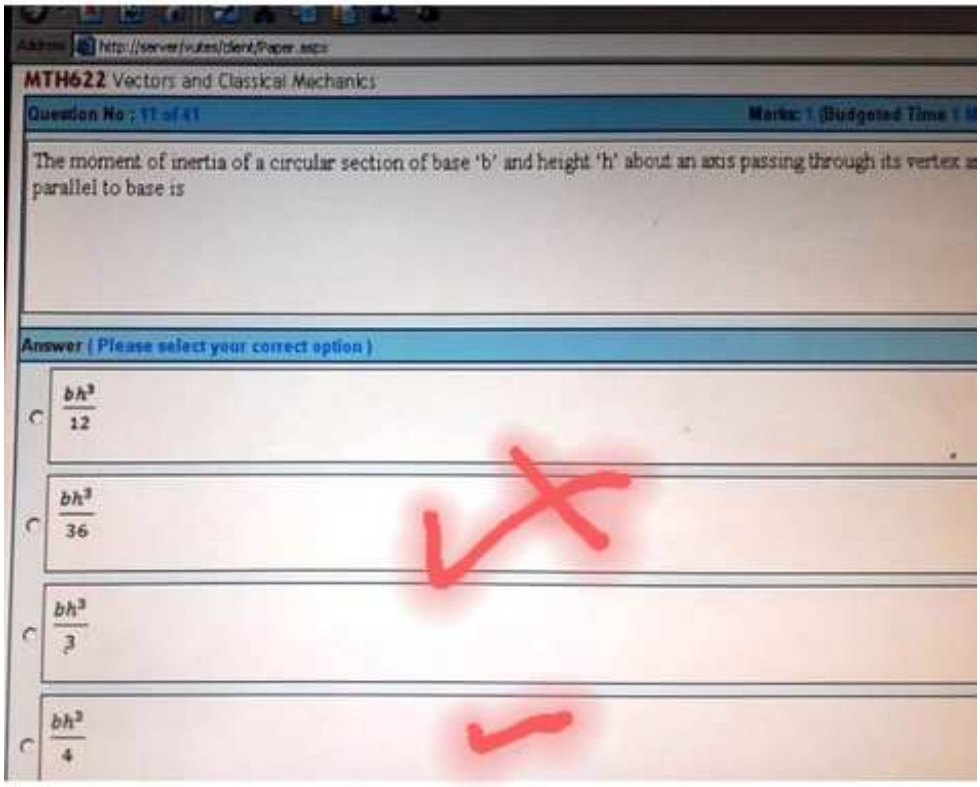
Answer (Please select your correct option)

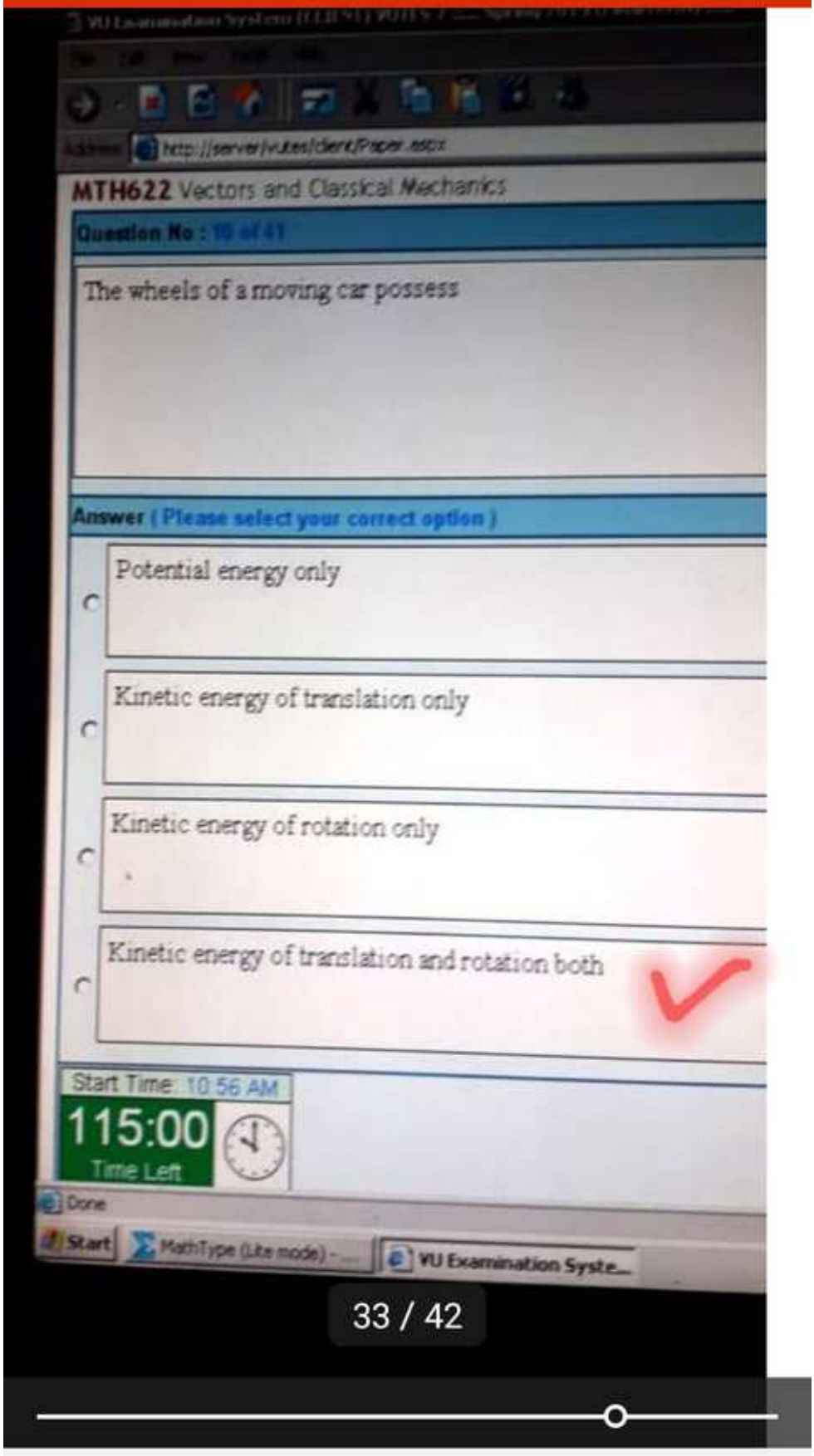
- $L = T + V$
- $L = T - V$
- $L = 2T + V$
- $L = 2T - V$

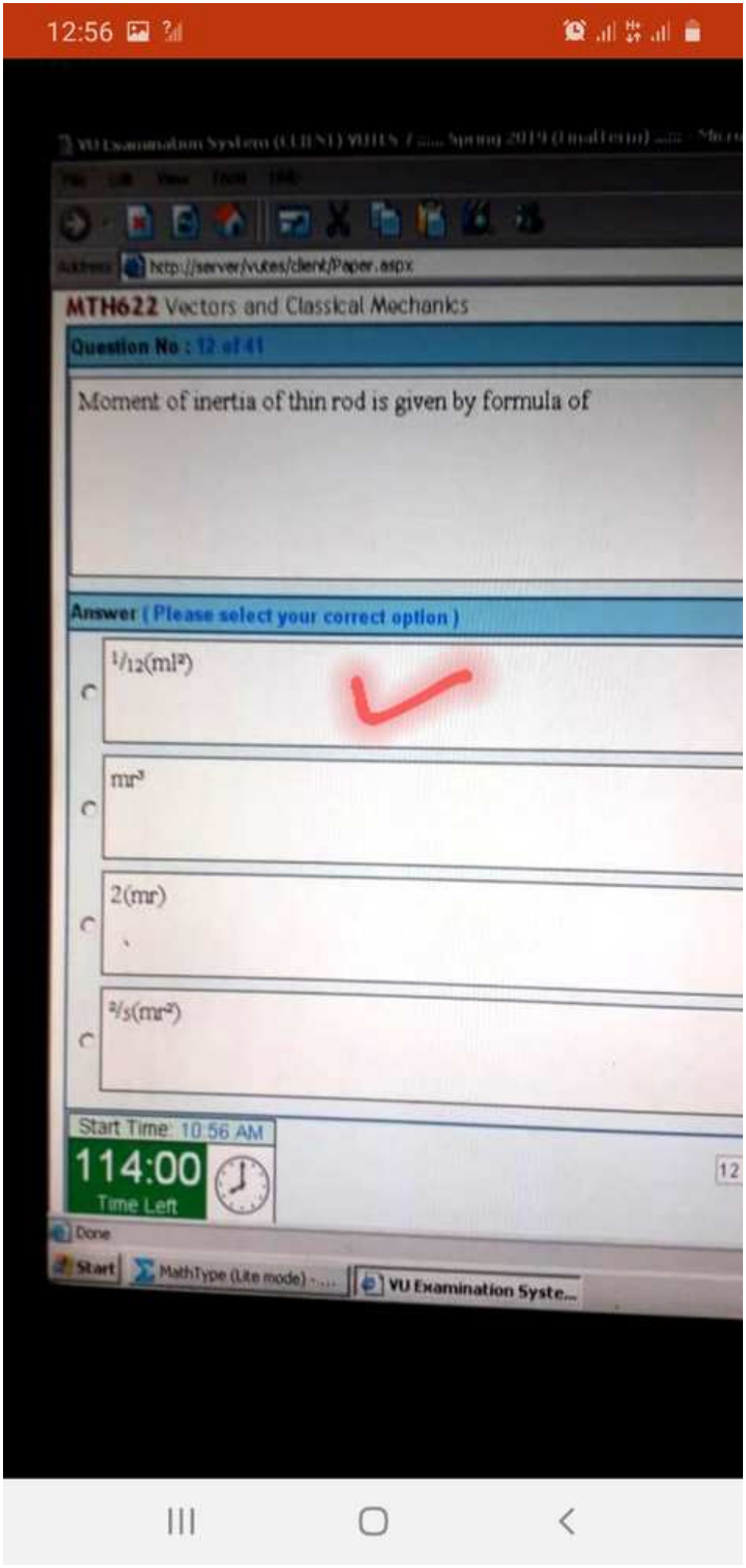

12:53
http://server/vutes/client/Paper.aspx
MTH622 Vectors and Classical Mechanics
Question No : 22 of 41
For an irrotational flow
Answer (Please select your correct option)
$\nabla \times \vec{v} = \vec{0}$
$\nabla \times \vec{v} \neq \vec{0}$
$\nabla . \vec{v} = \vec{0}$
None of these
Start Time: 10:56 AM
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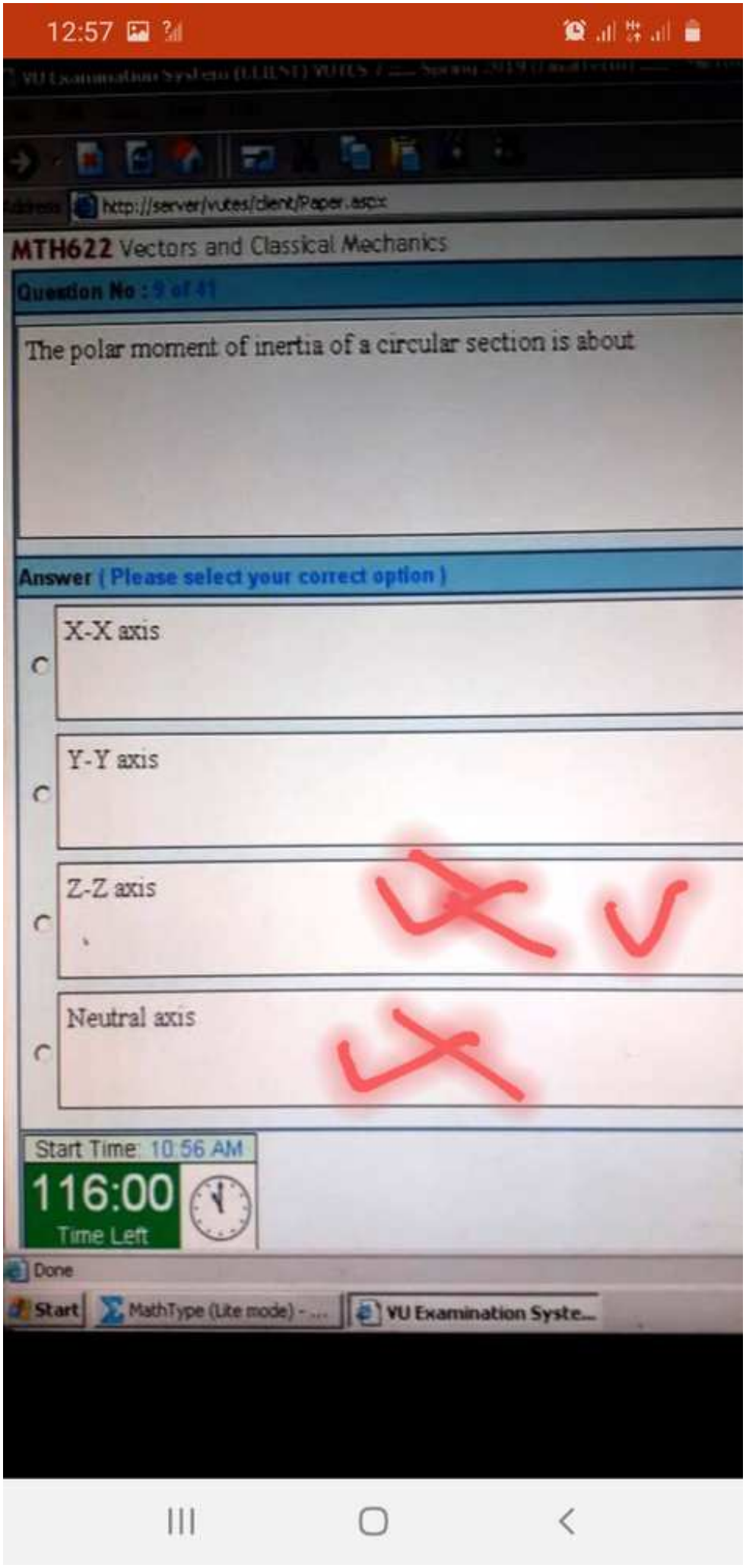

MTH622 Vectors and Classical Mechanics
According to parallel axis theorem, the moment of inertia of a section about an axis parallel to the axis through center of gravity (i.e. IP) is given by _____
(where, A = Area of the section, IG = Moment of inertia of the section about an axis passing through its C.G., and h = Distance between C.G. and the parallel axis.)
Answer (Please select your correct option)
IP = IG + Ah²
IP = IG - Ah²
IP = IG / Ah²
IP = Ah² / IG
Start Time: 10:56 AM
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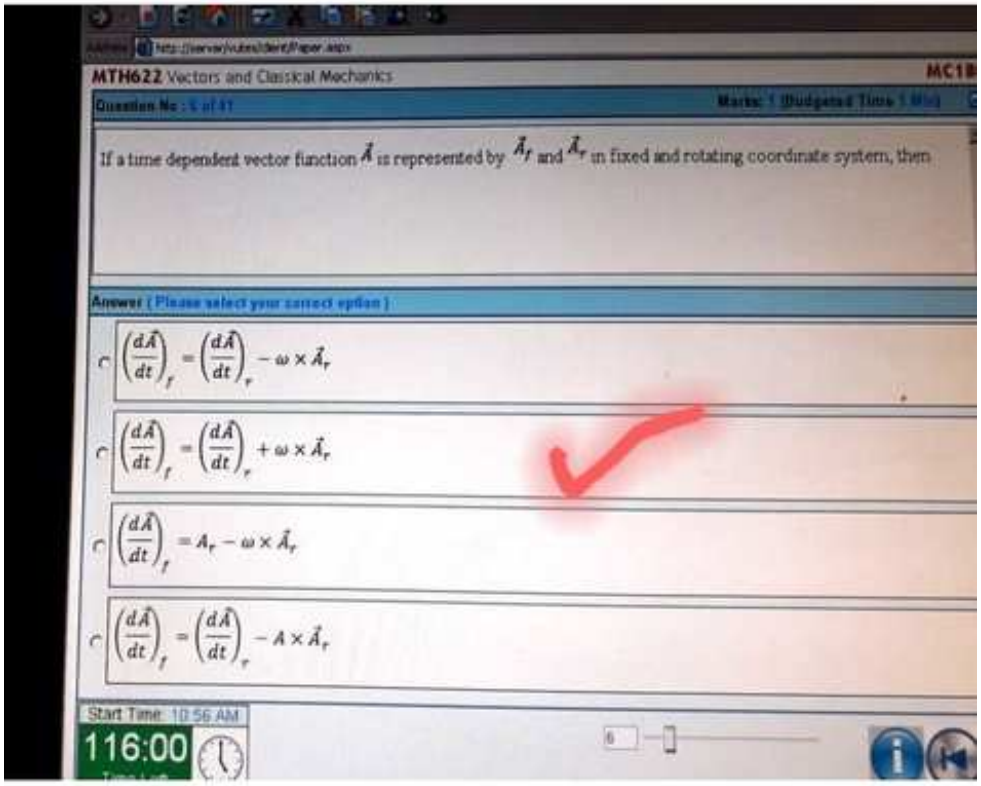

12:56
MTH622 Vectors and Classical Mechanics
Question No :
Moment of inertia of sphere is given as
Answer (Please select your correct option)
2(ml²)
r²
1/2(r)
2/5(mr²)
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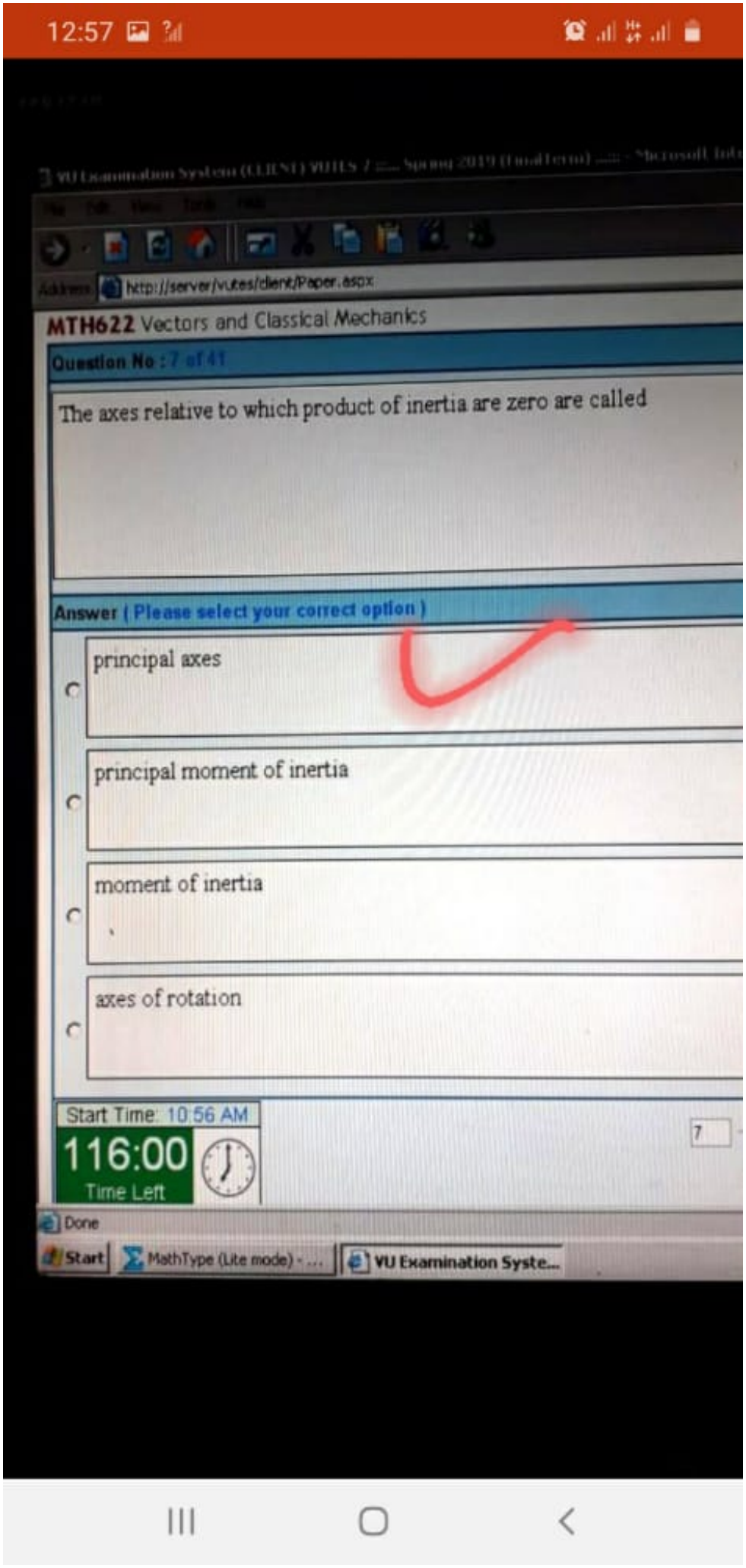

MTH622 Vectors and Classical Mechanics
Question No : 11 of 41
The moment of inertia of a circular section of base 'b' and height 'h' about an axis passing through its vertex
parallel to base is
Answer (Please select your correct option)
$\frac{bh^3}{12}$
$\frac{bh^3}{36}$
$\frac{bh^3}{3}$
$\frac{bh^3}{4}$

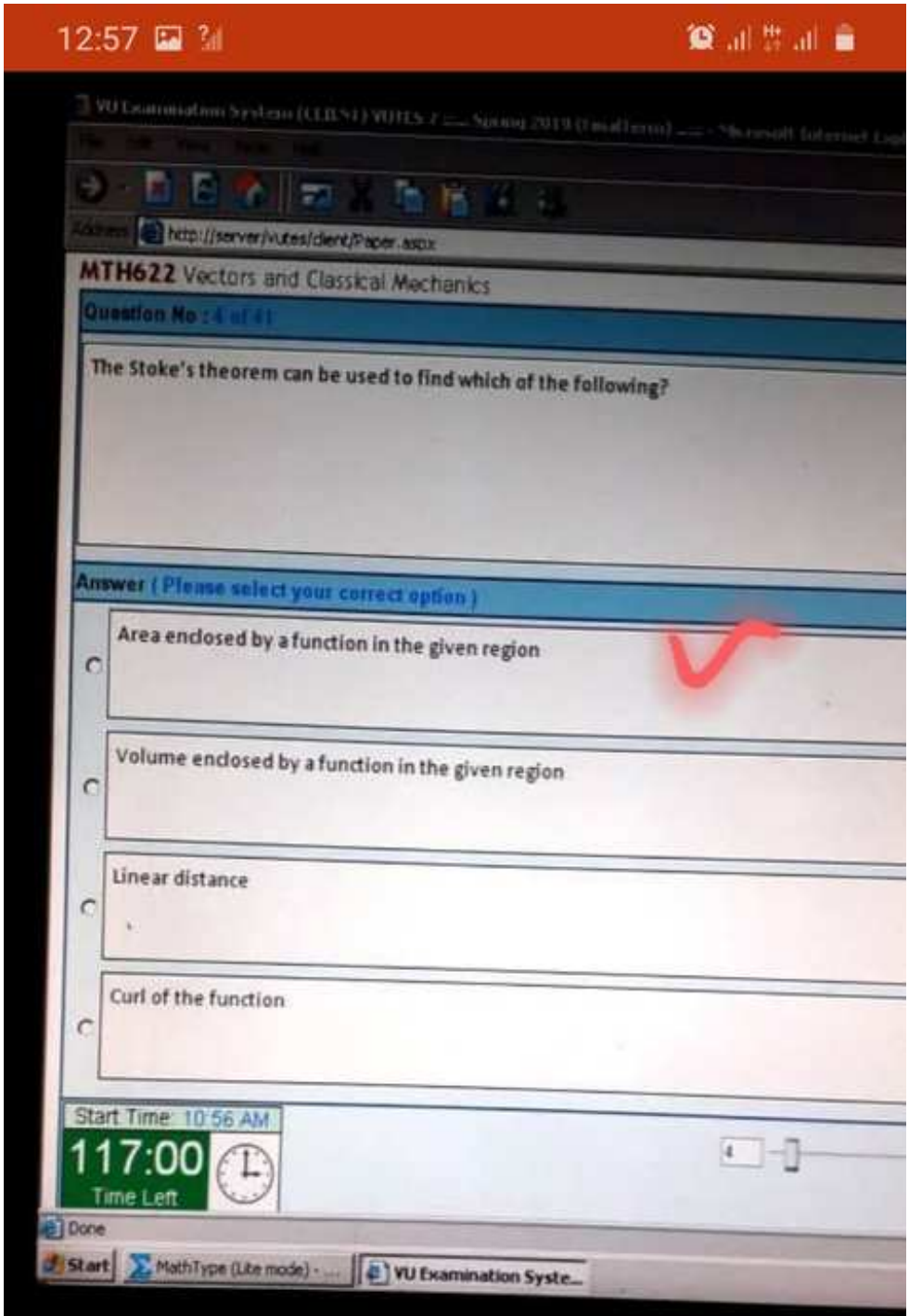

MTH622 Vectors and Classical Mechanics
Question No :
The wheels of a moving car possess
Answer (Please select your correct option)
Potential energy only
Kinetic energy of translation only
Kinetic energy of rotation only
Kinetic energy of translation and rotation both
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VU Examination Syste...
33 / 42

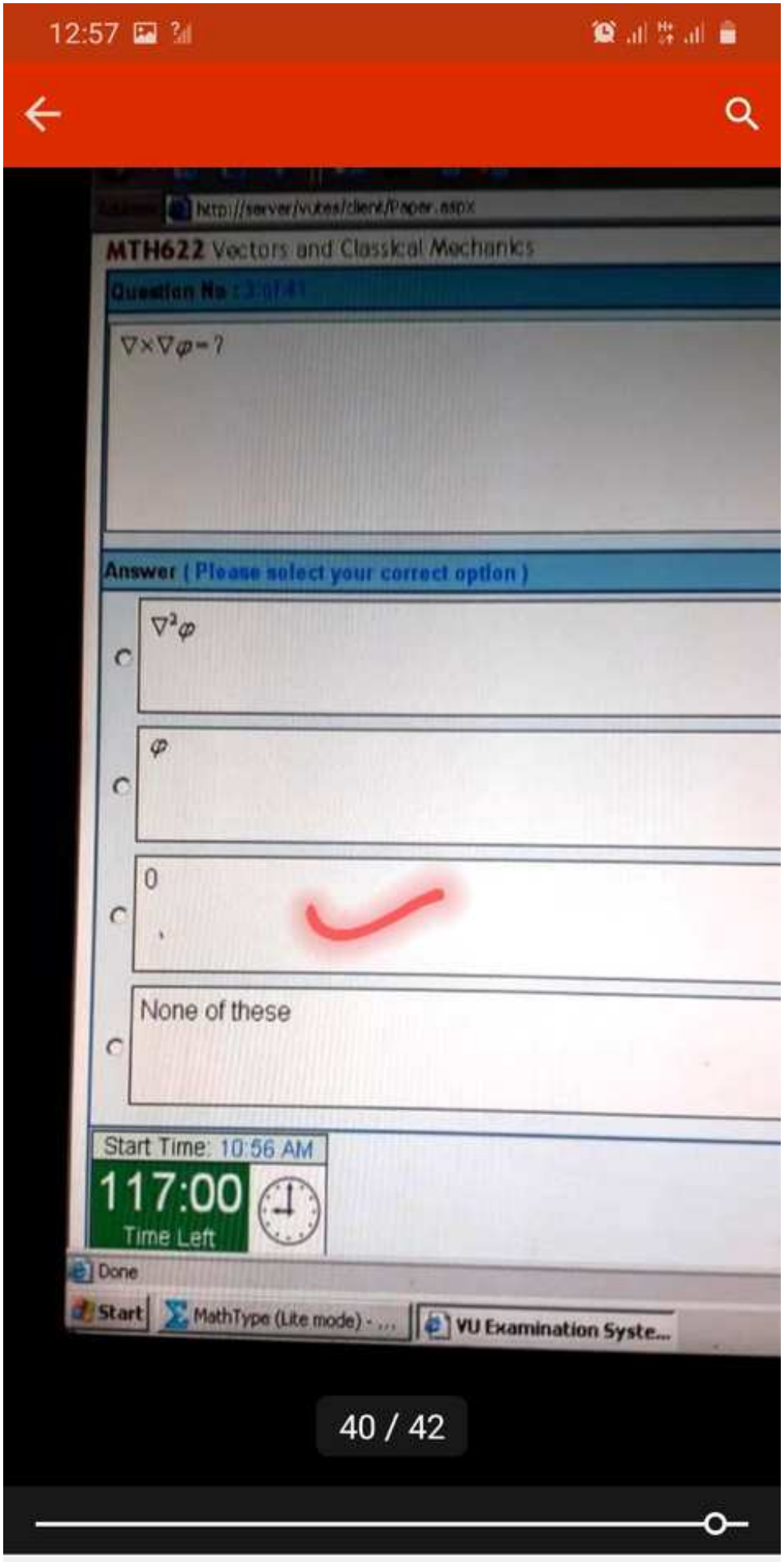

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MTH622 Vectors and Classical Mechanics
Question No : 12 of 41
Moment of inertia of thin rod is given by formula of
Answer (Please select your correct option)
1/12(ml²)
mr³
2(mr)
2/5(mr²)
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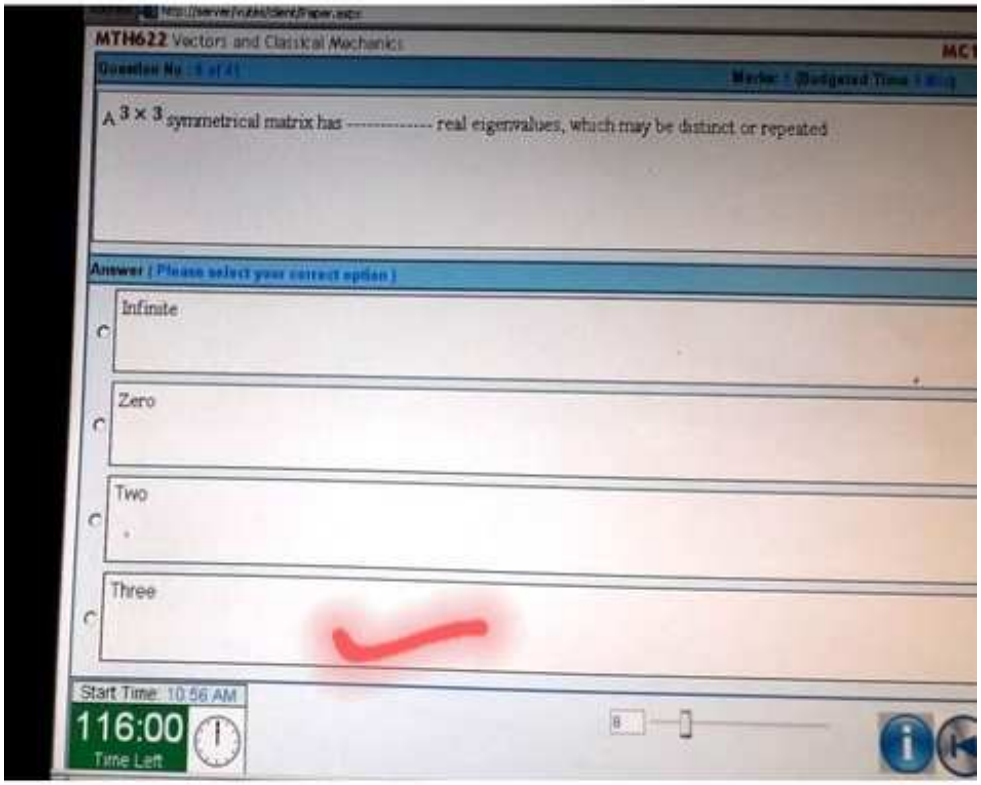

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MTH622 Vectors and Classical Mechanics
Question No : 9 of 41
The polar moment of inertia of a circular section is about
Answer (Please select your correct option)
X-X axis
Y-Y axis
Z-Z axis
Neutral axis
Start Time: 10:56 AM
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MathType (Lite mode) - ...
VU Examination Syste...


MTH622 Vectors and Classical Mechanics
If a time dependent vector function $\vec{A}$ is represented by $\vec{A}_f$ and $\vec{A}_r$ in fixed and rotating coordinate system, then
Answer (Please select your correct option)
$\left(\frac{d\vec{A}}{dt}\right)_f = \left(\frac{d\vec{A}}{dt}\right)_r - \omega \times \vec{A}_r$
$\left(\frac{d\vec{A}}{dt}\right)_f = \left(\frac{d\vec{A}}{dt}\right)_r + \omega \times \vec{A}_r$
$\left(\frac{d\vec{A}}{dt}\right)_f = A_r - \omega \times \vec{A}_r$
$\left(\frac{d\vec{A}}{dt}\right)_f = \left(\frac{d\vec{A}}{dt}\right)_r - A \times \vec{A}_r$
Start Time: 10:56 AM
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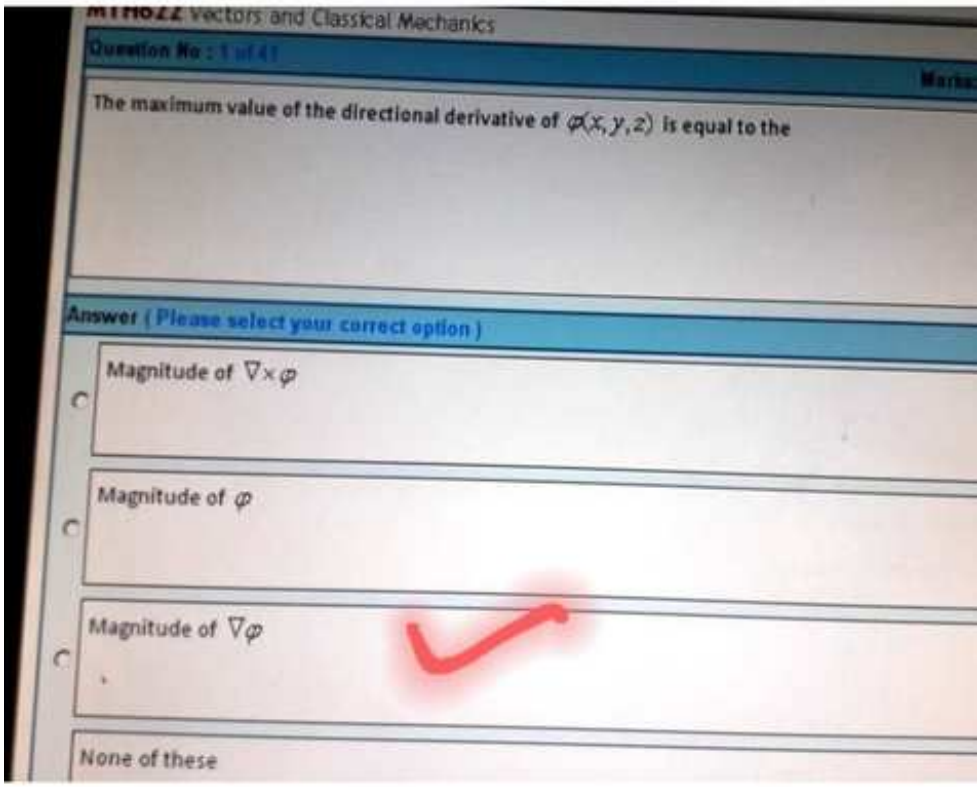

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http://server/vutes/client/Paper.aspx
MTH622 Vectors and Classical Mechanics
Question No : 7 of 41
The axes relative to which product of inertia are zero are called
Answer (Please select your correct option)
principal axes
principal moment of inertia
moment of inertia
axes of rotation
Start Time: 10:56 AM
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Time Left
7
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MathType (Lite mode) - ...
VU Examination Syste...


12:57
http://server/vutes/client/Paper.aspx
MTH622 Vectors and Classical Mechanics
Question No : 4 of 41
The Stoke's theorem can be used to find which of the following?
Answer (Please select your correct option)
Area enclosed by a function in the given region
Volume enclosed by a function in the given region
Linear distance
Curl of the function
Start Time: 10:56 AM
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Time Left
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MathType (Lite mode) - ...
VU Examination Syste...


12:57
http://server/vutes/client/Paper.aspx
MTH622 Vectors and Classical Mechanics
Question No
$\nabla \times \nabla \varphi = ?$
Answer (Please select your correct option)
$\nabla^2 \varphi$
φ
0
None of these
Start Time: 10:56 AM
117:00
Time Left
Done
Start
MathType (Lite mode) - ...
VU Examination Syste...
40 / 42


MTH622 Vectors and Classical Mechanics
A 3 × 3 symmetrical matrix has ---------- real eigenvalues, which may be distinct or repeated
Answer (Please select your correct option)
Infinite
Zero
Two
Three
Start Time 10:56 AM
116:00
Time Left

12:57



MTH022 Vectors and Classical Mechanics

Question No : 1 of 41

The maximum value of the directional derivative of $\varphi(x,y,z)$ is equal to the

Answer (Please select your correct option)

- Magnitude of $\nabla \times \varphi$
- Magnitude of φ
- Magnitude of $\nabla \varphi$
- None of these

14:14

Which of the following is NOT an application of Green's theorem?

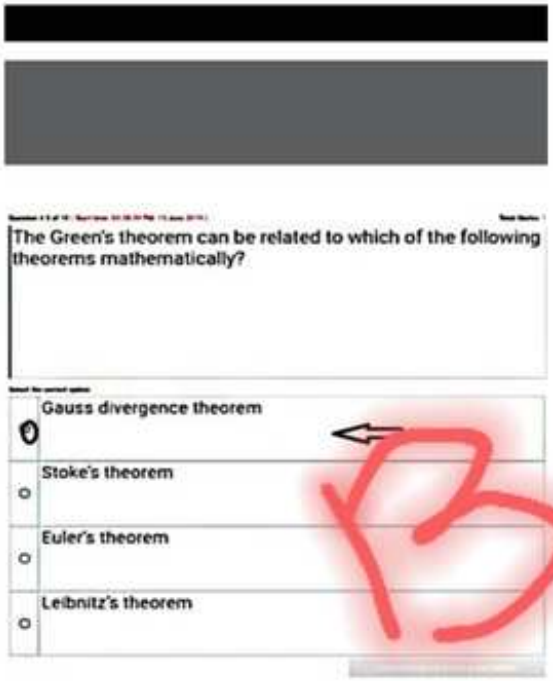
- Centroid of plane figures
- Volume of plane figures
- Area surveying
- Solving two dimensional flow integrals

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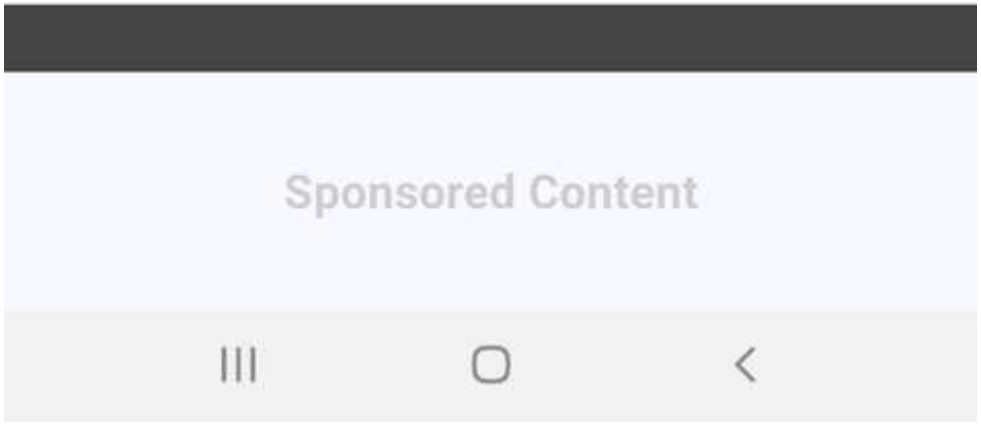
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The Green's theorem can be related to which of the following theorems mathematically?
Gauss divergence theorem
Stoke's theorem
Euler's theorem
Leibnitz's theorem
B


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14:14

The rate of change of tangential velocity of an object traveling in a circular orbit or path is known as

o	Normal acceleration
o	Tangential acceleration
o	Rectangular acceleration
o	None of these



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14:14

The point, through which the whole weight of the body acts, irrespective of its position, is known as

- Moment of inertia
- Center of gravity
- Center of percussion
- Center of mass

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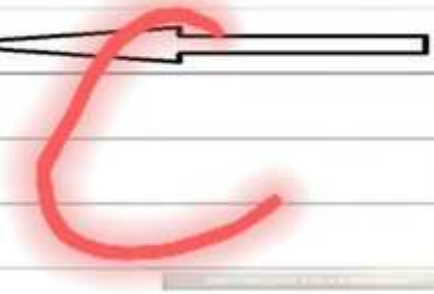
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14:14

The normal component of acceleration is zero when motion of particle is

- curvilinear
- rotational
- rectilinear
- translation



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14:14

Greens theorem applies only to _____ vector fields

- one dimensional
- two dimensional
- three dimensional
- None of these

b

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14:14

The radial component of velocity for a particle moving in circular path is

- constant
- radius itself
- variable
- zero

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Displacement of a body is a _____ quantity

- scalar
- vector
- scalar and vector
- none of these

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The Stoke's theorem can be used to find which of the following?

○	Surface area enclosed by a function in the given region
○	Volume enclosed by a function in the given region
○	Linear distance
○	Curl of the function

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14:15

Which of the following theorem convert line integral to surface integral?

o	Stoke's theorem only
o	Gauss divergence and Stoke's theorem
o	Green's theorem only
o	Stoke's and Green's theorem

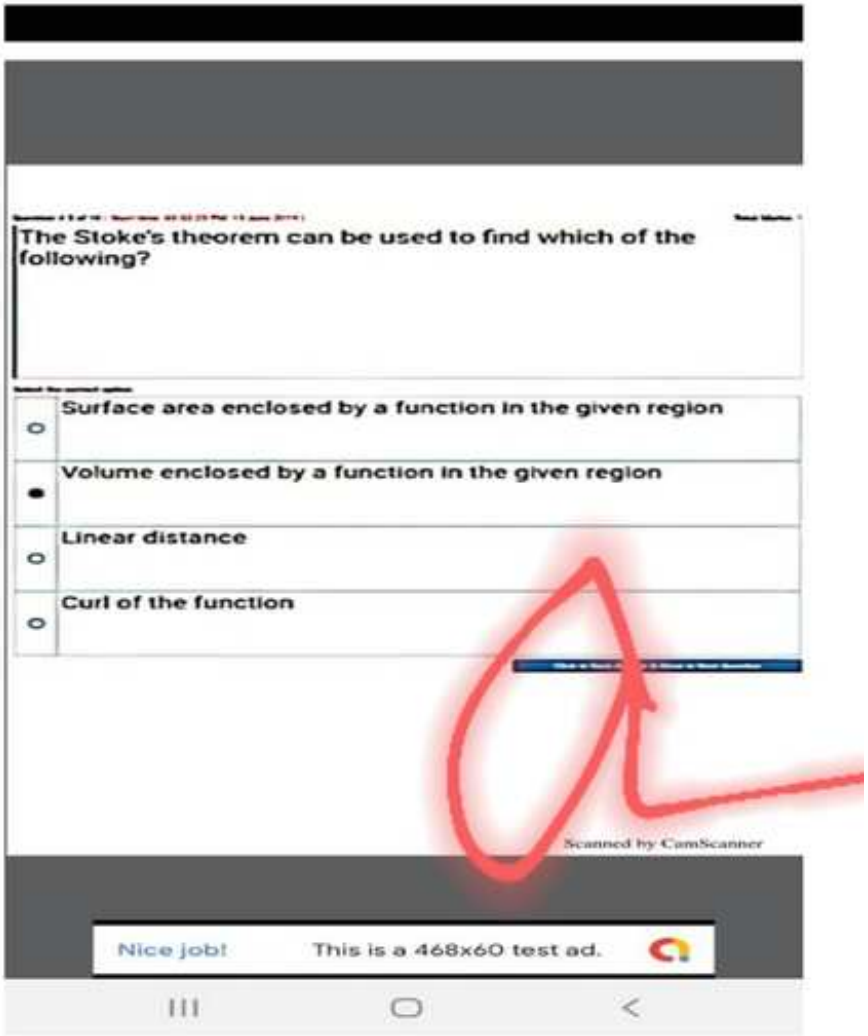
d

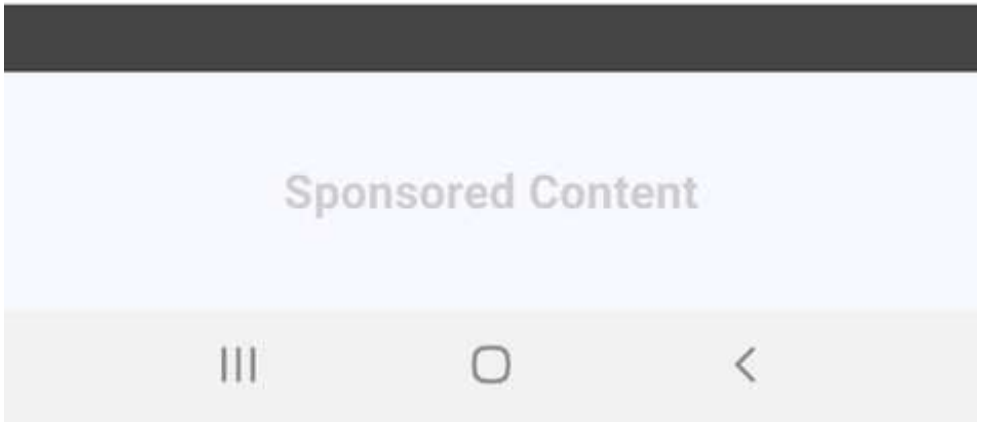
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The Stoke's theorem can be used to find which of the following?
Surface area enclosed by a function in the given region
Volume enclosed by a function in the given region
Linear distance
Curl of the function
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The point, through which the whole weight of the body acts, irrespective of its position, is known as

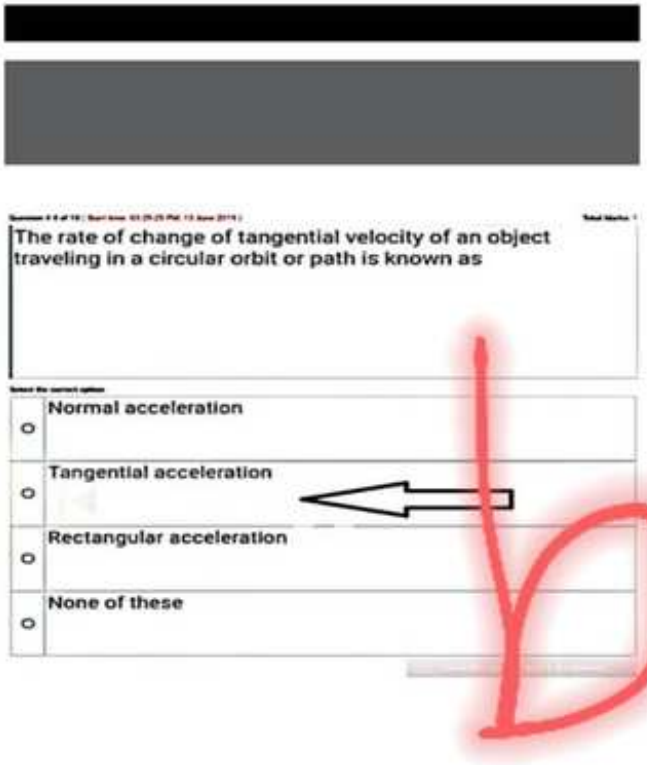
- Moment of inertia
- Center of gravity
- Center of percussion
- Center of mass

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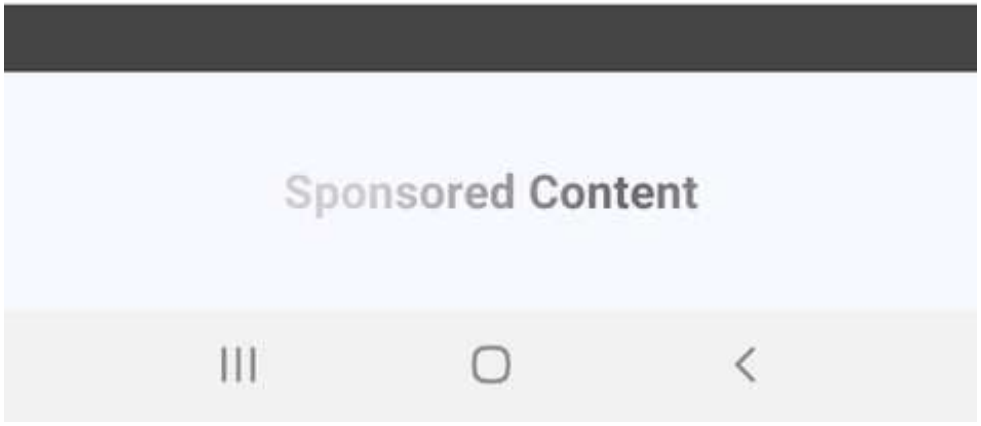
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The rate of change of tangential velocity of an object traveling in a circular orbit or path is known as
Normal acceleration
Tangential acceleration
Rectangular acceleration
None of these


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14:15

The Stoke's theorem uses which of the following operation?

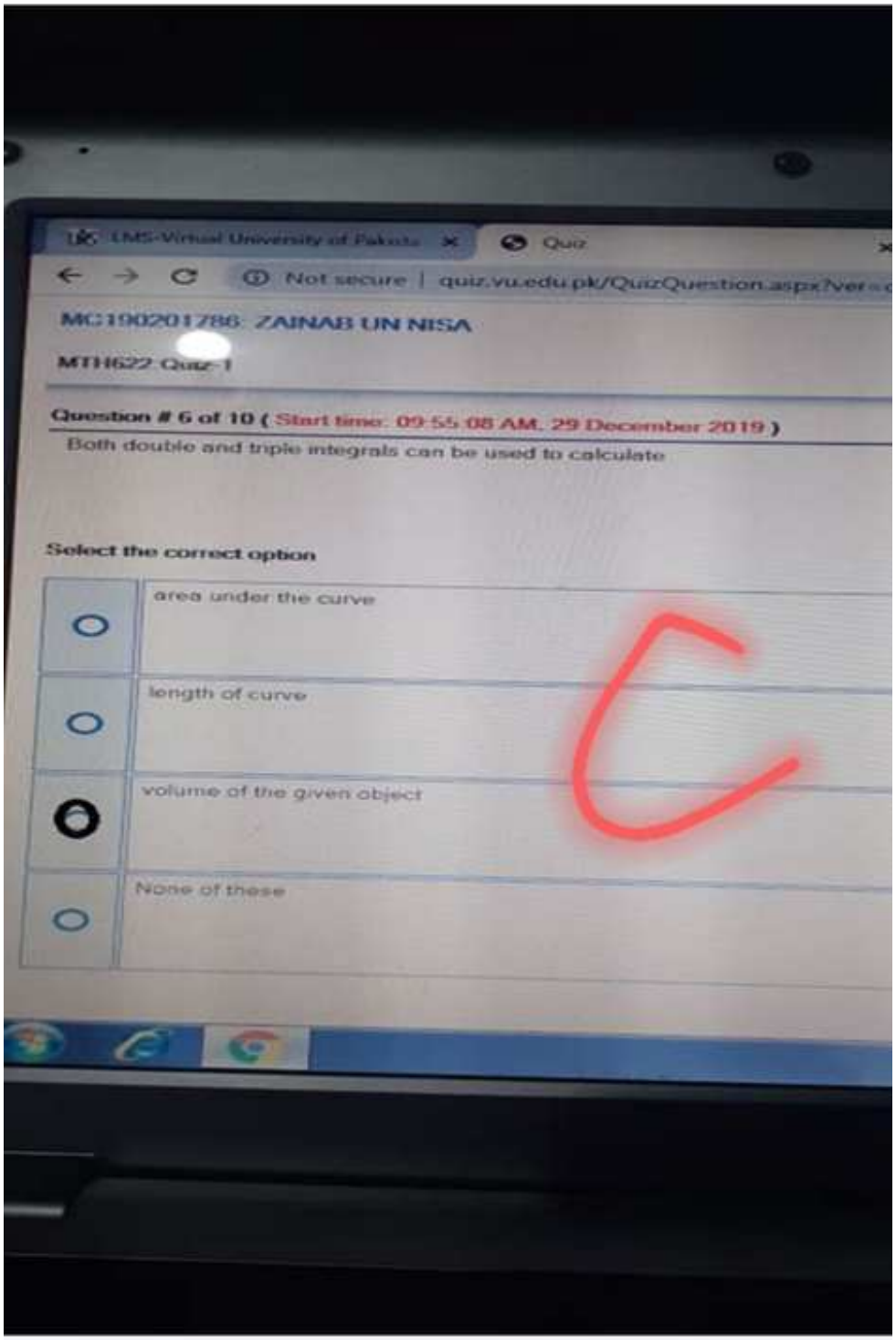
- Divergence
- Gradient
- Curl
- Laplacian

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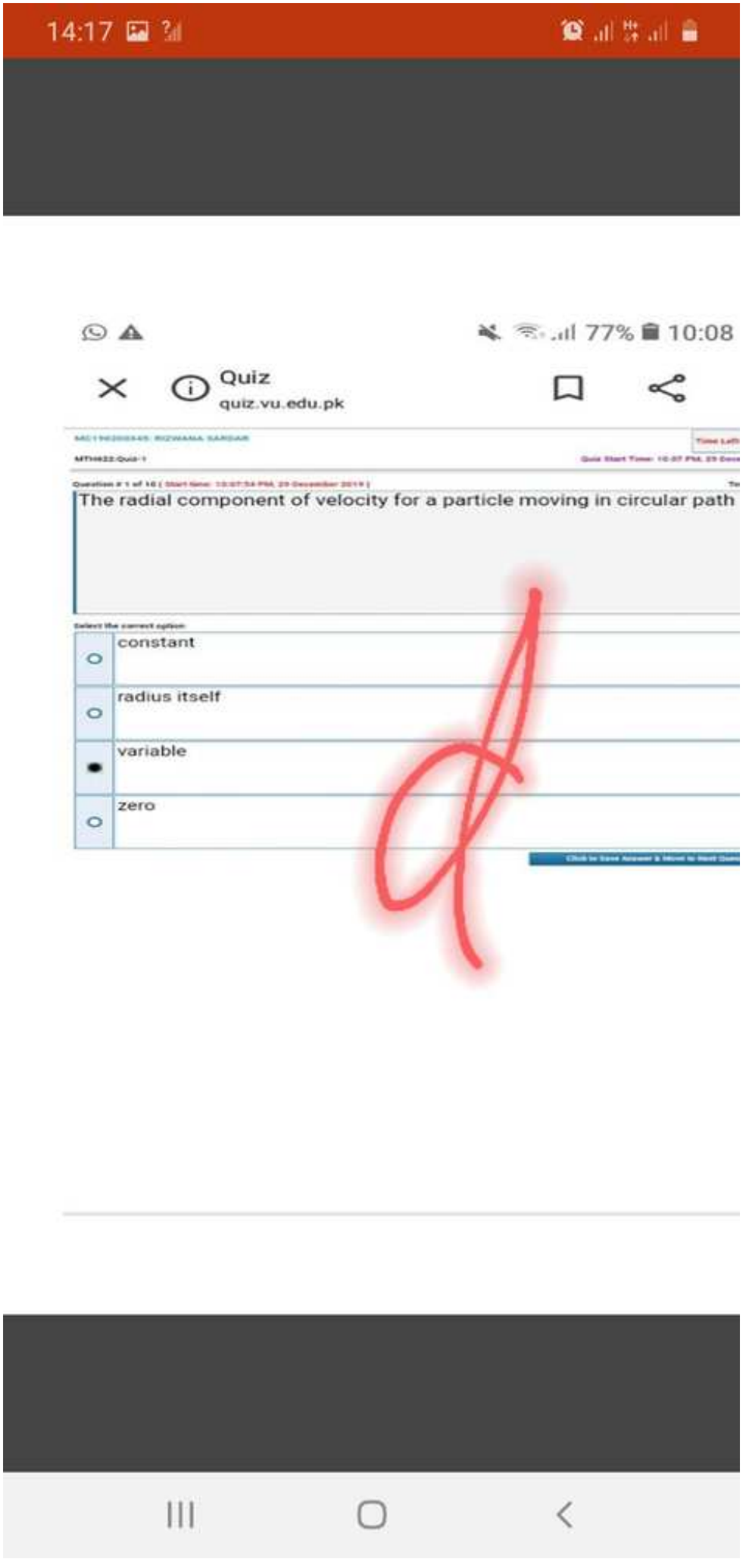
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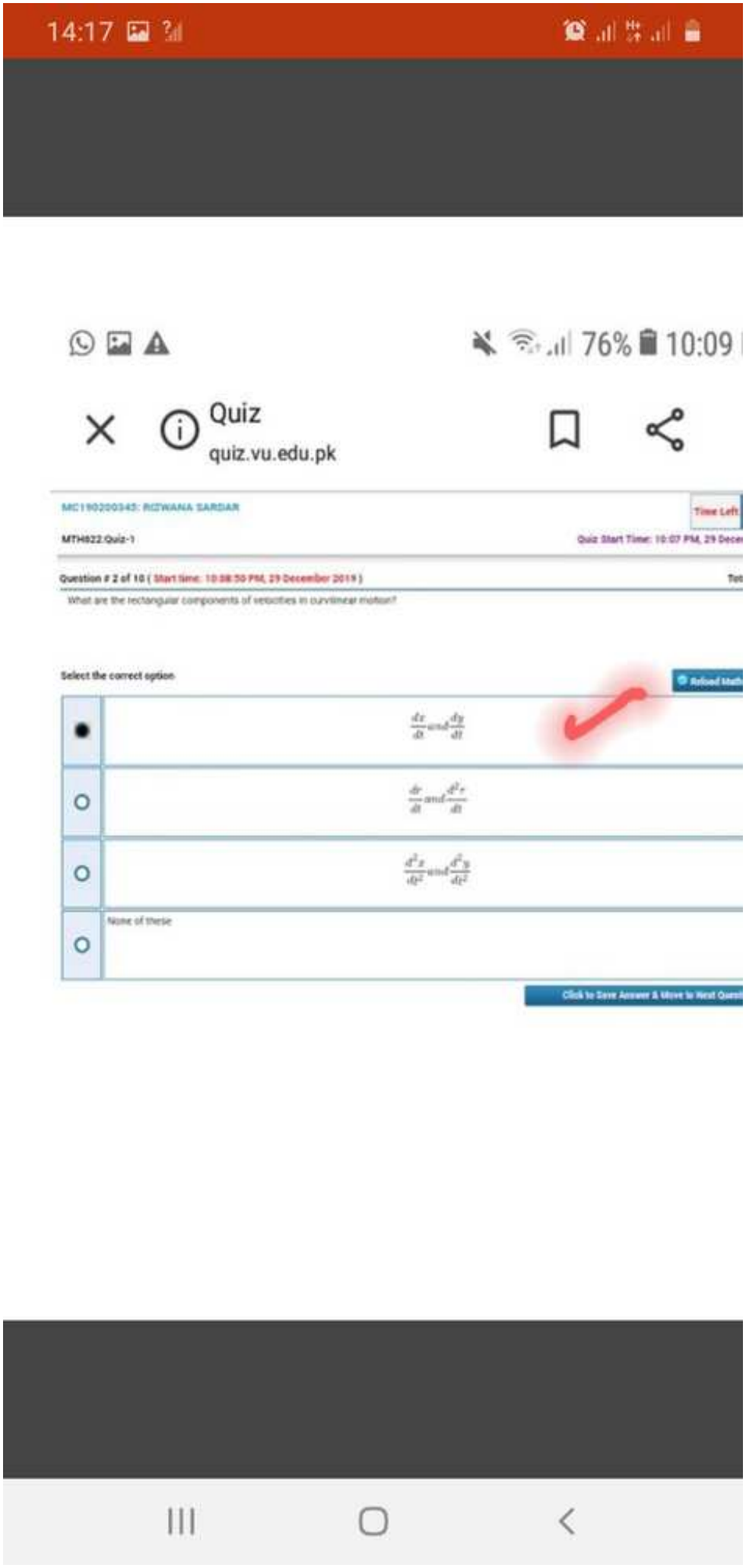
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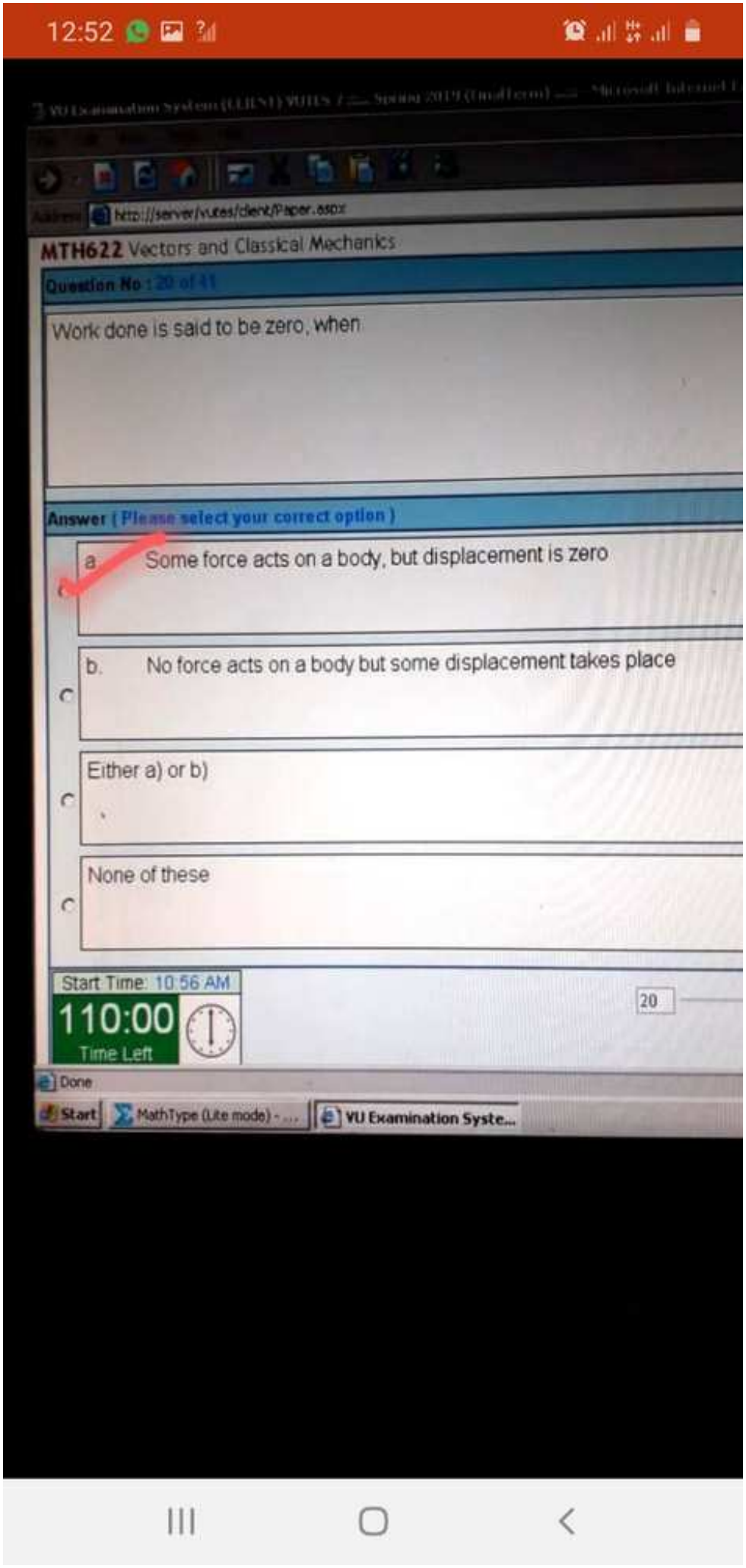
14:16

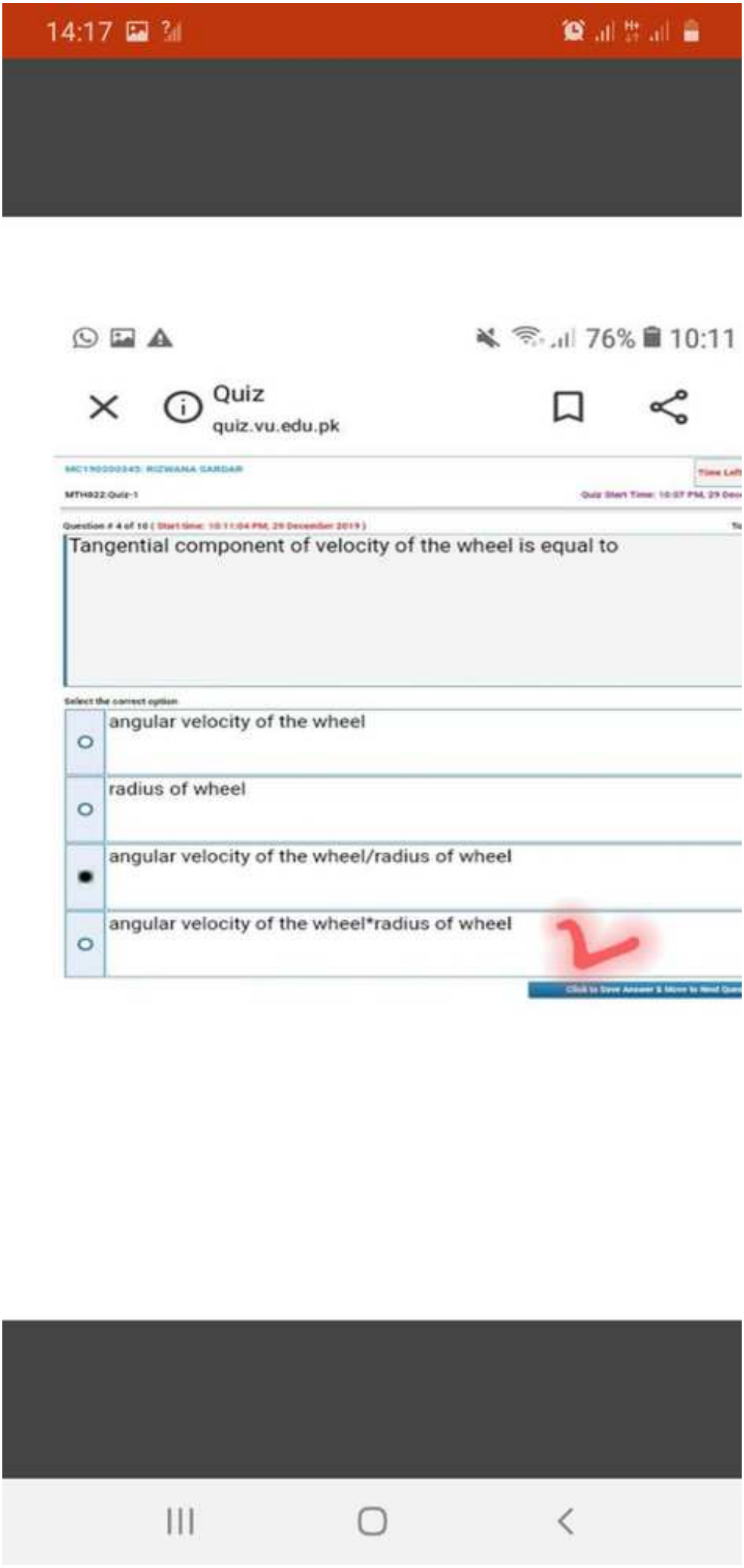


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14:17
77% 10:08
Quiz
quiz.vu.edu.pk
The radial component of velocity for a particle moving in circular path
constant
radius itself
variable
zero


14:17
76% 10:09
Quiz
quiz.vu.edu.pk
MC190200345: RIZWANA SARDAR
Time Left
MTH822:Quiz-1
Question # 2 of 10 (Start time: 10:08:50 PM, 29 December 2019)
What are the rectangular components of velocities in curvilinear motion?
Select the correct option
$\frac{dx}{dt}$ and $\frac{dy}{dt}$
$\frac{dr}{dt}$ and $\frac{d^2r}{dt}$
$\frac{d^2x}{dt^2}$ and $\frac{d^2y}{dt^2}$
None of these


12:52
MTH622 Vectors and Classical Mechanics
Question No : 20 of 41
Work done is said to be zero, when
Answer (Please select your correct option)
a. Some force acts on a body, but displacement is zero
b. No force acts on a body but some displacement takes place
Either a) or b)
None of these
Start Time: 10:56 AM
110:00
Time Left
20
Done
Start
MathType (Lite mode) - ...
YU Examination Syste...


14:17
76% 10:11
Quiz
quiz.vu.edu.pk
MTH822:Quiz-1
Tangential component of velocity of the wheel is equal to
Select the correct option
angular velocity of the wheel
radius of wheel
angular velocity of the wheel/radius of wheel
angular velocity of the wheel*radius of wheel