



VIRTUAL UNIVERSITY

MTH202

QUIZ #3, 4

FOR FINAL TERM

SPRING 2025

BY

BUTTERCUP

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Question # 10 of 10 (Start time: 11:38:24 PM, 10 July 2025)

A student can choose a computer project from one of the two lists. The two lists contain 12 and 18 possible projects, respectively. How many possible projects are there to choose from ?

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Select the correct option

<input checked="" type="radio"/>	30
<input type="radio"/>	18
<input type="radio"/>	12
<input type="radio"/>	216

Click to Save Answer & Move to N

Question # 9 of 10 (Start time: 11:37:42 PM, 10 July 2025)

A student is to answer five out of nine questions on exams. Find the number of ways that can choose the five questions.

Select the correct option



<input type="radio"/>	316
<input type="radio"/>	None of these
<input checked="" type="radio"/>	126
<input type="radio"/>	216

Click to Save Answer & Move

MTH202 - Discrete Mathematics (Quiz 4)

Question # 8 of 10 (**Start time: 11:36:52 PM, 10 July 2025**)

Let $X = \{1, 2, 3\}$, then 2-combinations of the 3 elements of the set X are _____ ?

Select the correct option

<input type="radio"/>	$\{1, 2\}, \{2, 1\}, \{1, 3\}, \{3, 1\}, \{2, 3\},$ and $\{3, 2\}$
<input type="radio"/>	$\{1, 2\}, \{2, 1\}, \{1, 3\}$ and $\{2, 3\}$
<input type="radio"/>	$\{1, 2\}, \{2, 1\}, \{1, 3\}$ and $\{3, 1\}$
<input checked="" type="radio"/>	$\{1, 2\}, \{1, 3\}$ and $\{2, 3\}$

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Question # / of 10 (**Start time: 11:36:34 PM, 10 July 2025**)

Find the value of $C(n, n)$

Select the correct option

<input type="radio"/>	None of these
<input type="radio"/>	n
<input type="radio"/>	0
<input checked="" type="radio"/>	1

Question # 6 of 10 (Start time: 11:36:16 PM, 10 July 2025)

Total Marks: 1

A student has 3 optional courses in mathematics and 5 optional courses in physics, how many total choices for him to take one course?

Select the correct option

<input checked="" type="radio"/>	8	FOR LMS HANDLING CONTACT: 0324-9427076
<input type="radio"/>	35	
<input type="radio"/>	7	
<input type="radio"/>	9	

[Click to Save Answer & Move to Next Question](#)

MTH202 - Discrete Mathematics (Quiz 4)

Question # 5 of 10 (Start time: 11:35:50 PM, 10 July 2025)

There are three bus lines between A and B, and two bus lines between B and C.
Find the number of ways a person can travel round trip by bus from A to C by way of B ?

Select the correct option

<input type="radio"/>	6
<input checked="" type="radio"/>	36
<input type="radio"/>	5
<input type="radio"/>	10

MTH202 - Discrete Mathematics (Quiz 4)**Question # 4 of 10 (Start time: 11:35:29 PM, 10 July 2025)**

How many 4-bit string contain at least one "1"

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Select the correct option

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<input type="radio"/>	12
<input checked="" type="radio"/>	15
<input type="radio"/>	16
<input type="radio"/>	14

Question # 5 of 10 (Start time: 11:55:03 PM, 10 July 2023)

 $C(n,0)=\dots\dots\dots$ **Select the correct option**

<input checked="" type="radio"/>	1
<input type="radio"/>	n
<input type="radio"/>	Both b and c
<input type="radio"/>	$C(n,n)$

Question # 2 of 10 (Start time: 11:34:40 PM, 10 July 2025)

Total Marks: 1

If one event can occur in n_1 ways, a second event can occur in n_2 ways, a third event can occur in n_3 ways, how ways in which exactly one of the events can occur?

Select the correct option

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$n_1 \cdot n_2 \cdot n_3$

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$n_1 + n_2 + n_3$

[Click to Save Answer & Move to Next Question](#)

Question # 1 of 10 (Start time: 11:34:12 PM, 10 July 2025)

In how many ways can a set of six letters be selected from the English Alphabets?

Select the correct option

<input type="radio"/>	$C(6, 26)$
<input checked="" type="radio"/>	$C(26, 6)$
<input type="radio"/>	$C(14, 6)$
<input type="radio"/>	None of these

Maxwell's second equation is expressed as _____:

Select the correct option

<input type="radio"/>	$\nabla \times B = 1$
<input type="radio"/>	$\nabla \times B = 0$
<input checked="" type="radio"/>	$\nabla \cdot B = 0$
<input type="radio"/>	$\nabla \cdot B = 1$

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The resolving power of a telescope can be increased by:

Select the correct option



increasing the lens diameters



increasing the objective focal length and decreasing the eyepiece focal length



inserting a correction lens between objective and eyepiece



decreasing the lens diameters

The relationship between the linear and volumetric expansion coefficients is:

Select the correct option



$$\alpha = \beta^3$$



$$\beta = \alpha^3$$



$$\alpha = 3\beta$$



$$\beta = 3\alpha$$

What is the correct expression for relativistic momentum \vec{p} ?

Select the correct option



$$\vec{p} = \frac{m\vec{u}}{\gamma}$$



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$$\vec{p} = \gamma m\vec{u}$$



$$\vec{p} = m\vec{u}$$



$$\vec{p} = \sqrt{\gamma m\vec{u}}$$

A free electron and a free proton have the same kinetic energy. This means that, compared to the matter wave associated with the proton, the matter wave associated with the electron has:

Select the correct option

a shorter wavelength and the same frequency

a longer wavelength and a greater frequency

a shorter wavelength and a greater frequency

a longer wavelength and the same frequency

If an electron of charge e is accelerated through a potential difference V , it will acquire energy

Select the correct option

<input checked="" type="radio"/>	eV	FOR LMS HANDLING CONTACT: 0324-9427076
<input type="radio"/>	$V/2$	
<input type="radio"/>	$2V$	
<input type="radio"/>	$E/2$	

Which property of light causes the formation of Newton's rings?

Select the correct option

<input type="radio"/>	Diffraction
<input type="radio"/>	Reflection
<input type="radio"/>	Refraction
<input checked="" type="radio"/>	Interference

If two capacitors, each with a capacitance of 100 microfarads, are connected in parallel, what is the total capacitance?

Select the correct option

<input checked="" type="radio"/>	200 microfarads
<input type="radio"/>	100 microfarads
<input type="radio"/>	150 microfarads
<input type="radio"/>	50 microfarads

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The primary of a 3:1 step-up transformer is connected to a source and the secondary is connected to a resistor R. The power dissipated by R in this situation is P. If R is connected directly to the source it will dissipate a power of:

Select the correct option

- 3P
- P/9
- P/3
- P

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Activate Windows
Go to Settings to activate Windows.

When two gases separate by a diathermal wall are in thermal equilibrium with each other:

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Select the correct option

<input type="radio"/>	Only their volumes must be the same
<input type="radio"/>	Only their pressures must be the same
<input checked="" type="radio"/>	Only their temperatures must be the same
<input type="radio"/>	They must have the same number of particles

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Question # 10 of 10 (**Start time: 11:40:27 PM, 08 July 2025**)

'Reductio ad absurdum' is another name of -----

Select the correct option

- | | |
|----------------------------------|-------------------------|
| <input type="radio"/> | Direct Method of proof |
| <input checked="" type="radio"/> | proof by contradiction |
| <input type="radio"/> | proof by contrapositive |
| <input type="radio"/> | None of these. |

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Question # 9 of 10 (**Start time: 11:39:40 PM, 08 July 2025**)

While proofing by contraposition the equivalenceis used.

Select the correct option

<input type="radio"/>	$\sim p \rightarrow \sim q \equiv \sim q \rightarrow \sim p$
<input type="radio"/>	$\sim p \rightarrow q \equiv \sim q \rightarrow \sim p$
<input checked="" type="radio"/>	$p \rightarrow q \equiv \sim q \rightarrow \sim p$
<input type="radio"/>	$p \rightarrow \sim q \equiv \sim q \rightarrow \sim p$

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Question # 8 of 10 (**Start time: 11:39:11 PM, 08 July 2025**)

The predicate which describes the initial state is called the ----- of the algorithm

Select the correct option

<input checked="" type="radio"/>	pre-condition
<input type="radio"/>	post-condition

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Question # 7 of 10 (**Start time: 11:38:48 PM, 08 July 2025**)

In division algorithm the pre-condition is?

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Select the correct option

- | | |
|----------------------------------|--|
| <input type="radio"/> | q and r are nonnegative integers |
| <input checked="" type="radio"/> | a is a nonnegative integer and d is a positive integer |

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Question # 6 of 10 (**Start time: 11:37:56 PM, 08 July 2025**)

The statement $n^2 > n + 3$ is true when _____.

Select the correct option

<input checked="" type="radio"/>	$n \geq 3$
<input type="radio"/>	$n \geq 2$
<input type="radio"/>	$n \geq 1$
<input type="radio"/>	$n \geq -1$

Question # 5 of 10 (Start time: 11:37:33 PM, 08 July 2025)

The set of prime numbers is -----

Select the correct option

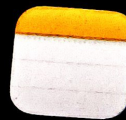
- | | |
|----------------------------------|-----------------|
| <input type="radio"/> | finite set. |
| <input type="radio"/> | continuous set. |
| <input type="radio"/> | None of these. |
| <input checked="" type="radio"/> | infinite set. |

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The correct opt

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F1



F2



F3



F4



F5

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Question # 4 of 10 (Start time: 11:37:07 PM, 08 July 2025)

In inductive property the first iteration of the loop is solved for?

Select the correct option

- None
- $I(0)$
- $I(k + 1)$
- $I(k)$

The correct option is B

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Question # 3 of 10 (**Start time: 11:36:36 PM, 08 July 2025**)

An integer n is a perfect square if and only if ----- for some integer k .

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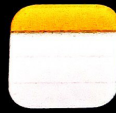
Select the correct option

- | | |
|----------------------------------|--------------------------------|
| <input type="radio"/> | $n = 2k$ |
| <input type="radio"/> | $n = \text{square-root of } k$ |
| <input checked="" type="radio"/> | $n = k^2$ |
| <input type="radio"/> | $n = k^3$ |

The correct option is C: $n = k^2$

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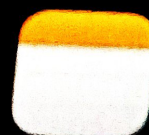
Question # 2 of 10 (**Start time: 11:35:49 PM, 08 July 2025**)

If 'n' is an odd integer then n^3+n is

Select the correct option

- | | |
|----------------------------------|------|
| <input checked="" type="radio"/> | even |
| <input type="radio"/> | odd |

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Question # 2 of 10 (**Start time: 11:35:49 PM, 08 July 2025**)

If 'n' is an odd integer then n^3+n is

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Select the correct option

<input type="radio"/>	even
<input type="radio"/>	odd

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Question # 1 of 10 (**Start time: 11:34:45 PM, 08 July 2025**)

For all positive real numbers a and b, if $a < b$, then -----

Select the correct option

- $a^2 = b^2$
- $a^2 < b^2$
- $a^2 > b^2$
- None of these.

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