Question #1 of 10 (Start time: 06:50:46 AM, 15 February 2022)

Which of the following statement is false?

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0	Discrete topology on a countable set X is second countable.
0	Any finite set with any topology is second countable.
0	Discrete topology on a real line R is second countable.
0	The set R with usual topology is second countable.

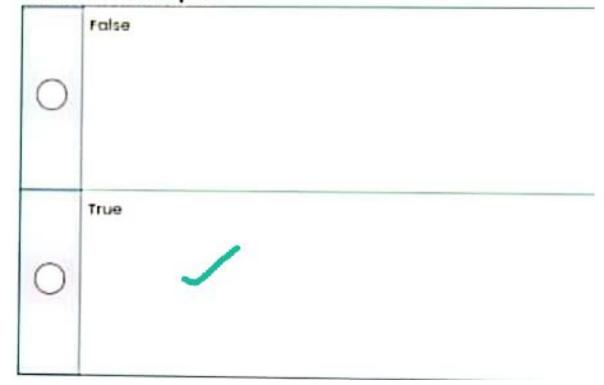
MTH634 - Topology (Quiz No. 3)

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Question # 2 of 10 (Start time: 06:52:02 AM, 15 February 2022)

Every Topological Space is a first countable space.



Question # 5 of 10 (Start time: 06:54:20 AM, 15 February 2022)

Total Marks: 1

 $\mathsf{tet}\ X = \{1, 2, 3, 4, 5, 6\}\ \mathsf{and}\ \tau = \{0, \{1\}, \{2\}, \{1, 2\}, X\}\ \mathsf{be}\ \mathsf{a}\ \mathsf{topology}\ \mathsf{on}\ X.\ \mathsf{then}\ \mathsf{the}\ \mathsf{local}\ \mathsf{base}\ (\ B_x\)\ \mathsf{of}\ \mathsf{the}\ \mathsf{point}\ x = 3, 4, 5\ \mathsf{is}_{-----}$



- $\{\{2\},\{1,2\},X\}$
 - {{1},{2},X}.
 - None of them.
 - (X)

Question # 4 of 10 (start time: 06:53:37 AM, 15 February 2022)

Let $X = \{1, 2, 3, 4, 5, 6\}$ and $\tau = \{\emptyset, \{3\}, \{4\}, \{3, 4\}, X\}$ be a topology on X, then which of the following is true?

0	The set $\{\emptyset, \{3\}, \{4\}, X\}$ is an open cover of the set $\{4\}$	
0	The set (Ø, (3), (4)) is an open sub-cover of (Ø, (3), (4), X).	
0	The set(0, (3), (4)) is an open cover of the set (4).	
0	All of them	

Question # 3 of 10 (Start time: 06:52:48 AM, 15 February 2022)

Let $X = \{1, 2, 3, 4\}$ and $\tau = \{\emptyset, \{1\}, \{2\}, \{1, 2\}, X\}$ be a topology on X, then which of the following is true ?

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0	(X, r) be a topological space.
0	Every element of X has countable local base.
0	All of them.
0	(X, r) be a first countable space.

Question # 10 of 10 (Start time: 07:00:57 AM, 15 February 2022)

Total Marks

Let $X = \{1, 2, 3, 4\}$ and $\tau = \{\emptyset, \{1\}, \{2\}, \{1, 2\}, X\}$ be a topology on X, then which of the following is NOT true ?

Select the correct option



the local base of the element 4 is Ø. A or B Every element of X has uncountable local base (X, r) be a first countable space (X, r) be a topological space.

Quiz Start Time: 06:50 AM, 15 February 2022

Juestion # 9 of 10 (Start time: 06:59:45 AM, 15 February 2022)

Total Marks: 1

sec(s)

If SX\$ has more than two points and \$\left({X,\tau } \right)\$ be an indiscrete topology then which of the following statement is true about \$\left((X,\tau) \right)\$?

0	It is not metrizable.
0	None of them.
0	It is metrizable.
0	It is Haussdorff.



Separable Spaces



Def:

A topological space (X, T) is said to be "Separable" if there exists a countable dense subset A of X.

i.e.

 $\exists A \subset X \text{ such that}$

1. A is countable.

 $2. \overline{A} = X.$

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Question # 7 of 10 (Start time: 12:29:21 PM, 15 February 2022)

If \$\left{ {x,\tau } \right)\$ be a separable topology then it must have countable dense set.

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Question # 10 of 10 (Start time: 12:31:15 PM, 15 February 2022)

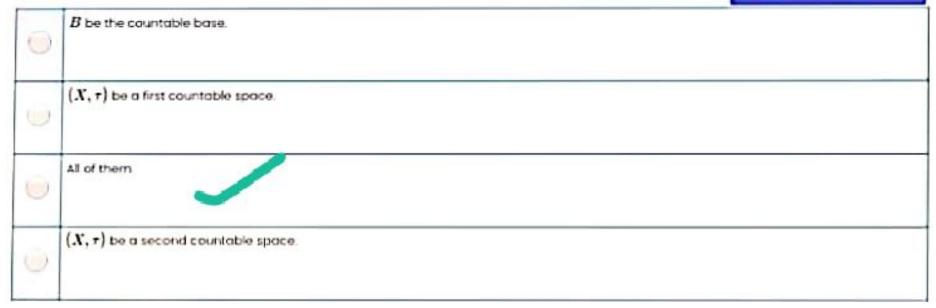
Total Marks: 1

Let $X = \{a, b, c\}$ and $\tau = \{\emptyset, \{a\}, \{b\}, \{a, b\}, X\}$ be a topology on X. If $B = \{\emptyset, \{a\}, \{b\}, X\}$ be the base of τ , then which of the following is true?

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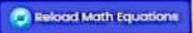
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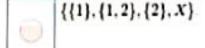


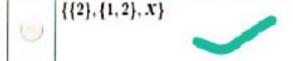


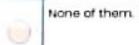
Question # 5 of 10 (Start time: 12:28:17 PM, 15 February 2022)

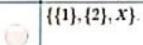
Total Marks: 1







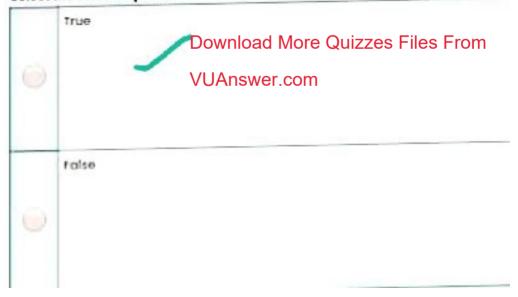




MTH634 - Topology (Quiz No. 3)

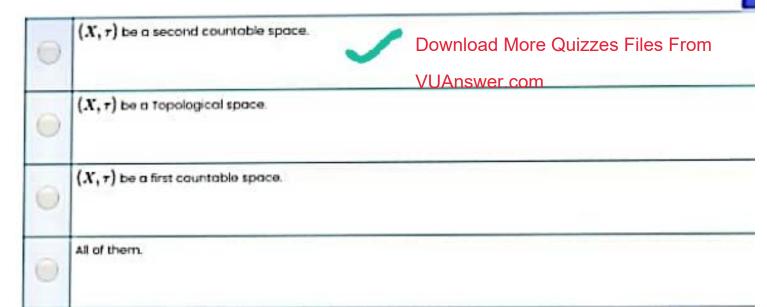
Question # 3 of 10 (Start time: 12:27:18 PM, 15 February 2022)

Every metric space is first countable.



Question # 4 of 10 (Start time: 12:27:47 PM, 15 February 2022)

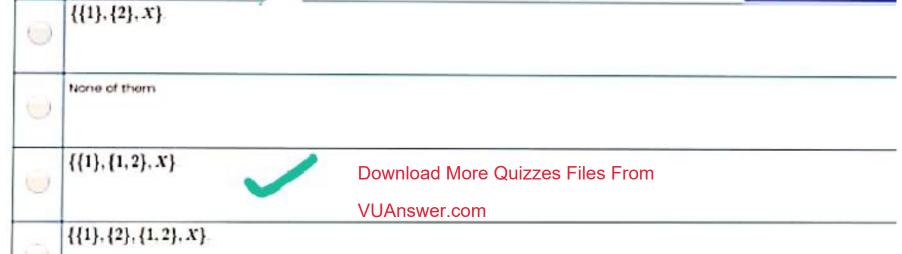
Let $X=\{a,b,c\}$ and $\tau=\{\emptyset,\{a\},\{a,b\},X\}$ be a topology on X, then which of the following is NOT true ?



Question # 6 of 10 (start time: 12:28:48 PM, 15 February 2022)

Total I

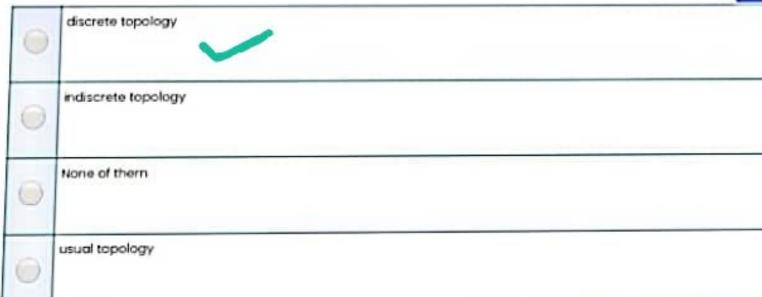




Question # 2 of 10 (Start time: 12:26:52 PM, 15 February 2022)

$$\text{Metric topology induced by } d(x,y) = \left\{ \begin{array}{ll} 0 & \text{if} & x=y \\ 1 & \text{if} & x\neq y \end{array} \right. \text{is called} \setminus_- \setminus_- \setminus_- \setminus_-$$





Question # 9 of 10 (Start time: 12:23:49 PM, 15 February 2022)

Let $X=\{1,2,3,4,5,6\}$ and $\tau=\{\emptyset,\{3\},\{4\},\{3,4\},X\}$ be a topology on X, then which of the following is true?

Select the correct option



- The set $\{0, \{3\}\}$ is an open cover of the set $\{4\}$
 - The set $\{0, \{3\}, \{4\}\}$ is an open cover of the set $\{4\}$



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- None of them.
- The set $\{\emptyset, \{3\}, \{4\}\}$ is an open cover of the set $\{2\}$

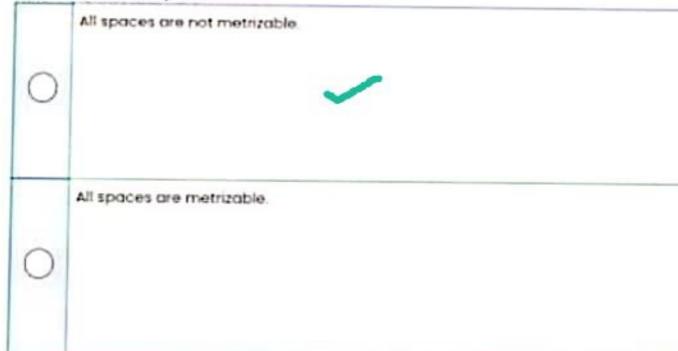
MTH634 - Topology (Quiz No. 3)

Question # 7 of 10 (start time: 12:22:10 PM, 15 February 2022)

Which of the following statement is true?

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MTH634 - Topology (C	uiz No. 3
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Question # 5 of 10 (Start time: 12:19:51 PM, 15 February 2022)

Let (X, au) be a metrizable then which of the following statement is true

0	All of them
0	(X, au) is separable.
0	(X, au) has the countable chain collection
0	(X, au) is second countable.

Question # 3 of 10 (Start time: 12:17:35 PM, 15 February 2022)

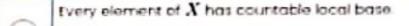
Let $X=\{1,2,3,4\}$ and $\tau=\{0,\{1\},\{2\},\{1,2\},X\}$ be a topology on X, then which of the following is true ?

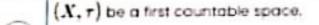
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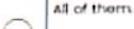
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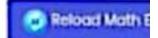




Question # 10 of 10 (Start time: 10:37:07 AM, 15 February 2022)

Te

Metric topology induced by d(x,y) = |x-y| on \mathbb{R} is called ____



(None of them
0	indiscrete topology
0	usual topology
	discrete topology



Question # 10 of 10 (Start time: 11:06:04 AM, 15 February 2022)

Total Marks

Let $X=\{1,2,3,4\}$ and $\tau=\{0,\{1,2\},\{3,4\},X\}$ be a topology on X and $A=\{2,3\}$ is a dense set, then which of the following is true?

Select the correct option



- (X, au) mar or may not be a separable topology.
- (X, τ) must be a separable topology



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- {1,2} is a closed set.
- None of them.

Question # 8 of 10 (Start time: 11:04:29 AM, 15 February 2022)

Let $X=\{1,2,3,4,5,6\}$ and $\tau=\{0,\{3\},\{4\},\{3,4\},X\}$ be a topology on X, then which of the following is true?

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Select the correct option

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0	All of them.
0	The set $\{0,\{3\},\{4\}\}$ is an open cover of the set $\{4\}$
0	The set $\{\emptyset,\{3\},\{4\},X\}$ is an open cover of the set $\{4\}$.
0	The set $\{\emptyset, \{4\}\}$ is an open cover of the set $\{4\}$.

Question # 1 of 10 (Start time: 10:59:08 AM, 15 February 2022)

Let $X=\{1,2,3,4,5,6\}$ and $au=\{\emptyset,\{3\},\{4\},\{3,4\},X\}$ be a topology on X, then which of the following

0	The set $\{\emptyset, \{3\}, \{4\}, X\}$ is an open cover of the set $\{4\}$.
0	The set $\{\emptyset,\{3\},\{4\}\}$ is an open cover of the set $\{4\}$.
0	The set $\{\emptyset,\{3\},\{4\}\}$ is an open sub-cover of $\{\emptyset,\{3\},\{4\},X\}$.
0	All of them