Question # 7 of 10 (Start time: 01:01:38 PM, 14 June 2022)

Total Marks: 1

Which of the following statement is true?

Select the correct option

Reload Math Equations

- $The\ collection\ B = \{(a, b] \subseteq \mathbb{R} : a < b\}\ of\ open\ intervals\ is\ a\ basis\ on\ \mathbb{R}.$
- $The\ collection\ B = \{(a, b) \subseteq \mathbb{R} : a < b\}\ of\ open\ intervals\ is\ a\ basis\ on\ \mathbb{R}.$ ✓
- $The\ collection\ B = \{[a, b) \subseteq \mathbb{R} : a < b\}\ of\ open\ intervals\ is\ a\ basis\ on\ \mathbb{R}.$
- all of the above

Question # 8 of 10 (Start time: 01:02:15 PM, 14 June 2022) Total Marks: 1

The following collection is a basis on R^2.

Select the correct option

Reload Math Equations

- B = $\{(a, b) \times (c, d) \subseteq R^2 : a < b, c < d\}$
- $B = \{(a, b) \subseteq R : a < b\}$

Question # 6 of 10 (Start time: 01:00:54 PM, 14 June 2022)

Total Marks: 1

If $X = \{a, b\}$ with topology $T = \{\emptyset, \{a\}, X\}$, then the neighborhoods of a are

Select the correct option

Reload Math Equations

- $\{a, b\}$ and X
- $\{a\}$ and X
- $\{b\}$ and X
- none

Question # 5 of 10 (Start time: 12:59:53 PM, 14 June 2022)

Total Marks: 1

Basis for indiscrete topology (ϕ, X) is.....

Select the correct option

Reload Math Equations

- $\{X\}$
- $\{0\}$
- empty set
- $\{\phi, X\}$

Click to Save Answer & Move to Next Question

Question # 4 of 10 (Start time: 12:59:10 PM, 14 June 2022) Total Marks: 1

The neighborhood system of a point p in an indiscrete space X is

Select the correct option

Reload Math Equations

- none
- $\emptyset$
- p
- X

Question # 3 of 10 (Start time: 12:58:02 PM, 14 June 2022) Total Marks: 1

The basis for the usual topology on a set of real numbers R is

Select the correct option

Reload Math Equations

- $\{(a, b) \subseteq R : a < b\}$
- All of the above
- $\{(a, \infty) \subseteq R : a \in R\}$
- $\{[a, b) \subseteq R : a < b\}$

Question # 2 of 10 (Start time: 12:57:24 PM, 14 June 2022) Total Marks: 1

Which of the following is the basis for a K-Topology defined on real line where K is a subset of R?

Select the correct option

Reload Math Equations

- $B_k = \{(a,b] \,|a,b \in R\} \cup \{(a,b]\backslash K \,|a,b \in R\}$
- $B_k = \{[a,b) \,|a,b \in R\} \cup \{[a,b)\backslash K \,|a,b \in R\}$
- $B_k = \{(a,b) \,|a,b \in R\} \cup \{(a,b)\backslash K \,|a,b \in R\}$
- $B_k = \{[a,b] \,|a,b \in R\} \cup \{[a,b]\backslash K \,|a,b \in R\}$

Question # 1 of 10 (Start time: 12:56:56 PM, 14 June 2022) Total Marks: 1

$$\overline{(\bar{A})} =$$

Select the correct option

Reload Math Equations

- A
- ϕ
- $\bar{A}$
- None of above

Question # 10 of 10 (Start time: 12:54:11 PM, 14 June 2022) Total Marks: 1

The interior of the four intervals $[a,b]$, (a,b), $(a,b]$, $[a,b)$ is

Select the correct option

Reload Math Equations

- (a,b)
- {a,b}

Question # 9 of 10 (Start time: 12:53:10 PM, 14 June 2022) Total Marks: 1

Which of the following is the smallest closed super set of a subset A of a topological space X?

Select the correct option

- open sets of A
- Complement of A
- Closure of a set A
- Derived set of A



Question # 10 of 10 (Start time: 12:49:31 PM, 14 June 2022)

The union of two neighborhoods of a point is not a neighborhood in a topological space.

Select the correct option

- false
- true



Question # 4 of 10 (Start time: 12:49:42 PM, 14 June 2022) Total Marks: 1

In the discrete space X, convergent sequences must be of the form given below, where b belongs to X

Select the correct option

Reload Math Equations

- $\langle a_1, a_2, \ldots, a_n, b, b, b \rangle$
- $\langle a_1, a_2, \ldots, a_n, b, b, b, \ldots \rangle$
- none
- $\langle a_1, a_2, \ldots \rangle$

Question # 10 of 10 (Start time: 12:49:26 PM, 14 June 2022)

Closure of a subset A of a topological space X is the intersection of all _____ of X containing A.

Select the correct option

- closed subsets
- subsets
- none of these
- open subsets

Question # 8 of 10 (Start time: 12:47:56 PM, 14 June 2022)

Let (X, τ) be the topological space and $A, B \subset X$,If $A \subset B$ then:

Select the correct option

○	$\bar{A} \subset \bar{B}$
○	$A \subset B$
○	$\bar{A} \subset B$
○	None of above

Let X be a topological space and A , a subset of X, then

Select the correct option

- $\bar{A} = A \cup A'$
- $\bar{A} = A \cap A'$
- $A' = A \cup \bar{A}$
- none

Question # 19 of 30 (Start time: 06:05:03 PM, 13 July 2020)

A function is continuous if and only if the inverse image of every ___ subset of Y under f is ___ in X

Select the correct option

- closed, closed
- Open, closed
- closed, open
- Proper,closed

Which of the following statement is correct?

Select the correct option

- The composition of two continuous function is piecewise continuous.
- The composition of two continuous function is a continuous function.
- The composition of two continuous function is discontinuous.
- The composition of two continuous function may or may not continuous.

Basis for indiscrete topology (ϕ, X) is.....

Select the correct option

- $\{0\}$
- empty set
- $\{X\}$
- $\{\phi, X\}$

Which of the following is the basis for a lower limit topology on R (The Set of Real Numbers)?

elect the correct option

○	$B_l = \{(a, b) \mid a, b \in R\}$
○	$B_l = \{[a, b] \mid a, b \in R\}$
○	$B_l = \{[a, b) \mid a, b \in R\}$
○	$B_l = \{(a, b] \mid a, b \in R\}$

Which of the following is the smallest closed super set of a subset A of a topological space X?

Select the correct option

- Derived set of A
- Closure of a set A 
- Complement of A
- open sets of A

For a function f: $X \to Y$, the restriction of f to A where A is a subset of X is continuous if f: $X \to Y$ is .....

Select the correct option

- discontinuous
- continuous
- piecewise continous
- none of these

Let τ be a topology on X. The elements of τ are called:

correct option

closed set

open sets



derived set

dense set

Which of the following is true for a subset A of a Topological space X.

Select the correct option

- $X = A^0 \cap Ext(A) \cup bd(A)$
- $X = A^0 \cup Ext(A) \cup bd(A)$ ✓
- $X = A^0 \cap Ext(A) \cap bd(A)$
- $X = A^0 \cup Ext(A) \cap bd(A)$

A subset A of a topological space X is closed if and only if .....

elect the correct option

○	$A = A^c$
○	$A' \subset A$
○	$A \supset A'$
○	$A' = A^c$

Which of the following topology contains the complete power set of a set?

Select the correct option

- Indiscrete topology
- lower limit topology
- Discrete topology 
- co finite topology

A function is continuous ..... it is continuous at ..... point of the domain space.

Select the correct option

- if, every
- if and only if , any
- if, any
- if and only if, every

If B is a basis for a topology T on a set X then ..... element of T can be written as union of the elements of B.

Select the correct option

- every
- no
- some
- one

Let $X = \mathbb{R}$ with usual topology and $B = [1, 2)$. Then interior of a set B is

ıe correct option

1
2
3/2
none

In a discrete space X, the derived set A' of any subset A of X is ..... .

Select the correct option

- ○ A itself
- ○ A complement
- ○ empty set
- ○ X

Which of the following statement is true?

Select the correct option

Reload Math Equations

- For A, B Subset of a topological Space X, $If\ A \supset B\ then\ A' \subset B'$
- For A, B Subset of a topological Space X, $If\ A \subset B\ then\ A' \supseteq B'$
- For A, B Subset of a topological Space X, $If\ A \subset B\ then\ A' \subset B'$
- For A, B Subset of a topological Space X, $If\ A \subset B\ then\ A' = B'$

Click to Save An

Every open subset of the real line is a union of disjoint .....

Select the correct option

- ○ Closed Intervals
- ○ Open Intervals
- ○ Semi Open Intervals
- ○ Sets

xample 1:-

et $X = \{a, b, c, d\}$ and

$= \{\phi, \{a\}, \{a, b\}, \{a, c, d\}, X\}$

e a topology of X. Let

$A = \{a, b, c\}$

quiz

Question # 4 of 10 (Start time: 01:09:26 PM, 14 June 2022)

Consider the following topology on $X = \{a, b, c, d, e\}$:

$$T = \{\emptyset, X, \{a\}, \{a, b\}, \{a, c, d\}, \{a, b, c, d\}, \{a, b, e\}\}$$

The neighborhood of the point e is

Select the correct option

- $\{a, b\}$
- $\{a, b, c\}$ ✓
- $\{a, b, c, e\}$
- none

Question # 2 of 10 (Start time: 01:07:08 PM, 14 June 2022) Total Marks: 1

The boundary of the four intervals $[a, b]$, (a, b), $(a, b]$, $[a, b)$ is

Select the correct option

Reload Math Equations

- (a, b)
- (a, b)

Question # 10 of 10 (Start time: 01:03:26 PM, 14 June 2022)

Let A, B be two subsets of a topological space X.

Select the correct option

- If $A \subset B$, then $Int(A) = Int(B)$.
- If $A \subset B$, then $Int(A) \subset Int(B)$. ✓
- If $A \subset B$, then $Int(B) \subset Int(A)$.
- none

MTH534:Quiz No. 2

Total Marks:

Question # 9 of 10 (Start time: 01:02:36 PM, 14 June 2022)

A proper closed subset of a topological space X can never dense in X.

Select the correct option

- False
- True

Question # 6 of 10 (Start time: 06:59:08 AM, 14 June 2022)

Which of the following is true for a subset A of a Topological space X.

Select the correct option

○	$X = A^0 \cap Ext(A) \cup bd(A)$
○	$X = A^0 \cup Ext(A) \cup bd(A)$ 
○	$X = A^0 \cup Ext(A) \cap bd(A)$
○	$X = A^0 \cap Ext(A) \cap bd(A)$

Question # 3 of 10 (Start time: 06:57:29 AM, 14 June 2022)

The neighborhood system of a point is a non empty set.

Select the correct option

○	false
●	true



Question # 2 of 10 (Start time: 06:56:57 AM, 14 June 2022)

Consider the sequence (0,0,0,...) with the usual topology of *R*. The sequence (0,0,0,...)

Select the correct option

- converges to -1
- converges to 0
- converges to 1
- non-convergent



uestion # 10 of 10 (Start time: 08:49:17 AM, 14 June 2022)

The basis consisting of all _____ in $\mathbb{R}^2$ generates the usual topology on $\mathbb{R}^2$.

elect the correct option

Reload

- closed balls
- open balls



uestion # 6 of 10 (Start time: 08:45:02 AM, 14 June 2022)

In a topological space, the interior of a set A is the union of all

elect the correct option



- open subsets of A
- closed subsets of A

uestion # 2 of 10 (Start time: 08:41:20 AM, 14 June 2022)

Closure of a subset A of a topological space X is t
intersection of all ..... of X containing A.

elect the correct option

- subsets
- closed subsets
- none of these
- open subsets

Closure of a Set:

Let (X, T) be a topological space and A be a subset of X. The closure of A, denoted as $\bar{A}$, is the intersection of all closed subsets of X containing A. i.e.

$$\bar{A} = \bigcap_{C \in C_A} C$$

where C_A is the class of all closed subsets of X containing A.

Question # 1 of 10 (Start time: 11:38:14 AM, 14 June 2022)

If A is a subset of a topological space X, then A is open if and only if

Select the correct option

O	$A \cap bd(A) \neq \phi$
O	$A \cap bd(A) = A$
O	$A \cap bd(A) = \phi$
O	none

Question # 2 of 10 (Start time: 11:39:23 AM, 14 June 2022) Total Marks: 1

The basis for usual topology on R is the set of all .....

Select the correct option

- closed intervals
- closed disks
- open intervals
- open disks

Question # 2 of 10 (Start time: 11:39:43 AM, 14 June 2022)

Which of the following is true for a subset A of a Topological space X.

Select the correct option

- $X = A^0 \cap Ext(A) \cap bd(A)$
- $X = A^0 \cup Ext(A) \cap bd(A)$
- $X = A^0 \cap Ext(A) \cup bd(A)$
- $X = A^0 \cup Ext(A) \cup bd(A)$



Click to Save An

Question # 4 of 10 (Start time: 07:50:25 AM, 14 June 2022)

Let $X = \{a, b, c\}$. Then which of the following is not a basis for any topology on X?

Select the correct option

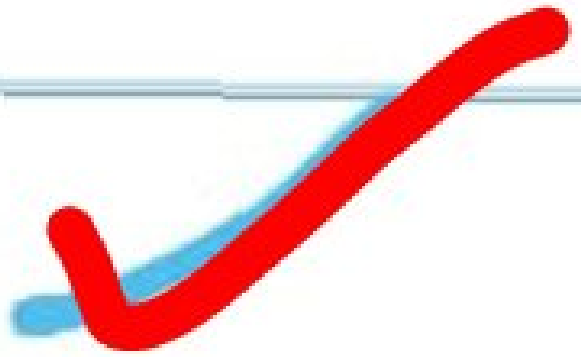
○	B = {{a, b}, {b, c}}
○	B = {{a, b}, {b}, {b, c}}

Question # 8 of 10 (Start time: 08:47:15 AM, 14 June 2022)

Let A, B be two subsets of a topological space X. Then

Select the correct option

- $int(A \cup B) \subset int(A) \cup int(B)$
- $int(A) \cup int(B) \subset int(A \cup B)$



Which of the following is the smallest closed super set of a subset A of a topological space X?

Select the correct option

- Complement of A
- open sets of A
- Closure of a set A
- Derived set of A

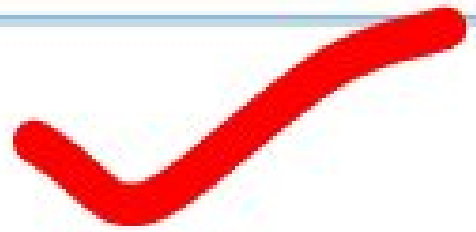


Question # 4 of 10 (Start time: 11:41:17 AM, 14 June 2022)

Let $X = \mathrm{R}$ with usual topology and $B = [1, 2)$. Then interior of a set B is

Select the correct option

- 2
- none
- 3/2
- 1



Click to Save A

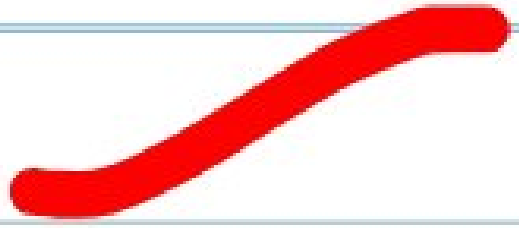
Question # 5 of 10 (Start time: 11:42:15 AM, 14 June 2022) Total Marks: 1

The subset A of topological space X is open if and only if

Select the correct option

Reload Math Equations

- none
- $A = A^o$
- $A = A$
- $A = X$



Click to Save Answer & Move to Next Question

Question # 5 of 10 (Start time: 11:43:18 AM, 19 June 2022)

Which of the following statement is true?

Select the correct option

- $The\ collection\ B = \{[a,b) \subseteq \mathbb{R} : a < b\}\ of\ open\ intervals\ is\ a\ basis\ on\ \mathbb{R}.$
- $The\ collection\ B = \{(a,b) \subseteq \mathbb{R} : a < b\}\ of\ open\ intervals\ is\ a\ basis\ on\ \mathbb{R}.$
- $The\ collection\ B = \{(a,b] \subseteq \mathbb{R} : a < b\}\ of\ open\ intervals\ is\ a\ basis\ on\ \mathbb{R}.$
- all of the above

MTH634:Quiz No. 2 Quiz Start Time: 11:38 AM, 14 June 2022

Question # 6 of 10 (Start time: 11:43:03 AM, 14 June 2022) Total Marks: 1

$$Let\ X = \{a, b, c, d, e\}\ with\ \text{topology}\ \tau = \{\phi, \{b\}, \{a, d\}, \{a, b, d\}, \{a, c, d, e\}, X\}.\ \ If\ A = \{a, b, c\},\ then$$

Select the correct option

Reload Math Equations

- a is an interior point of A.
- a is not an interior point of A.



Question # 7 of 10 (Start time: 11:44:46 AM, 14 June 2022)

The following collection is a basis on R^2 .

Select the correct option

○	B = $\{(a, b) \times (c, d) \subseteq R^2 : a < b, c < d\}$
○	$B = \{[a, b) \subseteq R : a < b\}$

Question # 8 of 10 (Start time: 11:45:50 AM, 14 June 2022) Total Marks: 1

If B is a basis for a topology T on a set X then every element of T can be written as ..... of the elements of B.

Select the correct option

- difference
- intersection
- complement
- union



Question # 8 of 10 (Start time: 11:47:44 AM, 14 June 2022)

Let X be a topological space and A, a subset of X, then

Select the correct option

Relo

- $\bar{A} = A \cap A'$
- $A' = A \cup \bar{A}$
- $\bar{A} = A \cup A'$
- none

Click to Save Answer & Move to Ne

Question # 1 of 10 (Start time: 11:47:42 AM, 14 June 2022) Total Marks: 1

Let X ={a,b,c,d} with the topology $\tau = \{\phi, \{a\}, \{a,b\}, \{a,c,d\}, X\}$, then which of the following represents a subspace topology relative to A={a,b,c}?

Select the correct option

Reload Math Equations

- $\tau_A = \{\phi, \{a\}, \{a,c,d\}, A\}$
- $\tau_A = \{\phi, \{a\}, \{a,b\}, \{a,c\}, A\}$
- $\tau_A = \{\phi, \{a\}, \{a,c\}, A\}$
- $\tau_A = \{\phi, \{a\}, \{a,b\}, A\}$

MTH634:Quiz No. 2

Question # 10 of 10 (Start time: 11:48:21 AM, 14 June 2022)

Closure of A is the smallest closed superset of A.

Select the correct option

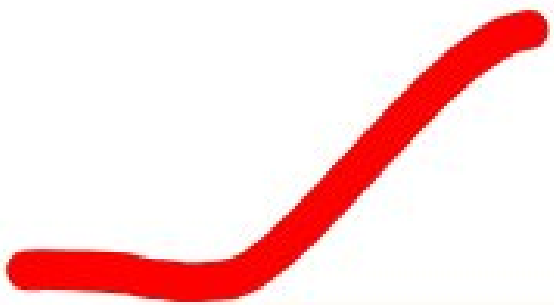
- True
- False

Question # 9 of 10 (Start time: 11:49:09 AM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

- $Ext(A) \cap Int(A) = \phi$.
- $Ext(A) \cup Int(A) = \phi$



Question # 10 of 10 (Start time: 11:36:21 AM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

- $Ext(A) \subseteq A^c$
- $Ext(A) \subseteq A$



Question # 4 of 10 (Start time: 11:51:14 AM, 14 June 2022)

Subset A of a topological space (X, τ) is.....iff $\dot{A} = A$.

Select the correct option

- open
- Closed

Question # 5 of 10 (Start time: 11:51:50 AM, 14 June 2022)

If $X = \{a, b\}$ with topology $T = \{\emptyset, \{a\}, X\}$, then the neighborhoods of a are

Select the correct option

- $\{a\}$ and X
- $\{b\}$ and X
- $\{a, b\}$ and X
- none

Question # 6 of 10 (Start time: 11:53:11 AM, 14 June 2022)

Let A be a non empty proper subset of an indiscrete topological space X. The exterior of A is

Select the correct option:

- $\emptyset$
- A itself



Question # 8 of 10 (Start time: 11:55:21 AM, 14 June 2022) Total Marks: 1

Boundary point of a set is also called..... point.

Select the correct option

- frontier
- exterior
- interior
- limit

MTH634:Quiz No. 2

Question # 9 of 10 (Start time: 11:56:05 AM, 14 June 2022)

The union of two neighborhoods of a point is not a neighborhood in a topological space.

Select the correct option

- true 
- false

Question # 1 of 10 (Start time: 12:05:48 PM, 14 June 2022) Total Marks: 1

Let X ={a,b,c,d} with the topology $\tau = \{\varphi, \{a\}, \{a, b\}, \{a, c, d\}, X\}$,then which of the following represents a subspace topology relative to A={a,b,c}?

Select the correct option

Reload Math Equations

- $\tau_A = \{\varphi, \{a\}, \{a, b\}, A\}$
- $\tau_A = \{\varphi, \{a\}, \{a, c, d\}, A\}$
- $\tau_A = \{\varphi, \{a\}, \{a, b\}, \{a, c\}, A\}$
- $\tau_A = \{\varphi, \{a\}, \{a, c\}, A\}$

Click to Save Answer & Move to Next Question

Question # 3 of 10 (Start time: 12:05:59 PM, 14 June 2022)

$$\overline{(\bar{A})} =$$

Select the correct option

- None of above
- ϕ
- A
- $\bar{A}$ ✓

Question # 4 of 10 (Start time: 12:07:30 PM, 14 June 2022)

Let $X = \{a, b, c\}$. Then which of the following is not a basis for any topology on X ?

Select the correct option

- $B = \{\{a, b\}, \{b, c\}\}$
- $B = \{\{a, b\}, \{b\}, \{b, c\}\}$

Question # 2 of 10 (Start time: 12:07:24 PM, 14 June 2022) Total Marks: 1

The basis consisting of all _____ in $\mathbb{R}^2$ generates the usual topology on $\mathbb{R}^2$.

Select the correct option

Reload Math Equations

- open balls
- closed balls

Question # 8 of 10 (Start time: 12:11:56 PM, 14 June 2022)

Let (X, τ) be a topological space, and let $A \subseteq X$. Then

Select the correct option

O	Interior of A is a closed subset of X not contained in A.
O	Interior of A is a closed subset of X contained in A.
O	Interior of A is an open subset of X contained in A.
O	Interior of A is an open subset of X not contained in A.

Question # 9 of 10 (Start time: 12:14:04 PM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

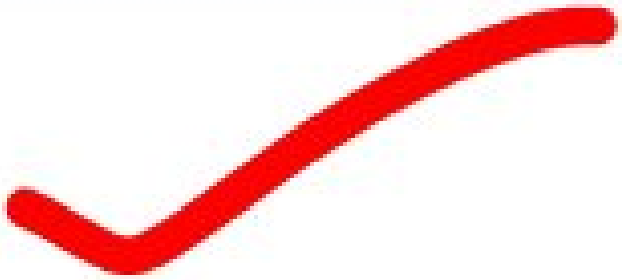
- $Ext(A) \subseteq A$
- $Ext(A) \subseteq A'$

Question # 5 of 10 (Start time: 12:14:21 PM, 14 June 2022)

Let X be nonempty set, and let $\mathcal{B} = \{\{x\}: x \in X\}$. If T is a topology on X and $\mathcal{B}$ is a subset of T, then

Select the correct option

- T is the indiscrete topology on X.
- T is the discrete topology on X.



Question # 10 of 10 (Start time: 12:16:08 PM, 14 June 2022)

Let A, B be two subsets of a topological space X.

Select the correct option

- ○ If $A \subset B$, then $Int(A) \subset Int(B)$.
- ○ none
- ○ If $A \subset B$, then $Int(B) \subset Int(A)$.
- ○ If $A \subset B$, then $Int(A) = Int(B)$.

Question # 6 of 10 (Start time: 12:16:26 PM, 14 June 2022)

Which of the following is true for a subset A of a Topological space X.

Select the correct option

- $X = A^{0} \cup Ext(A) \cup bd(A)$
- $X = A^{0} \cup Ext(A) \cap bd(A)$
- $X = A^{0} \cap Ext(A) \cup bd(A)$
- $X = A^{0} \cap Ext(A) \cap bd(A)$

Question # 7 of 10 (Start time: 12:17:53 PM, 14 June 2022) **Total Marks:** 1

Consider the following topology on $X = \{a, b, c, d, e\}$:

$$T = \{\emptyset, X, \{a\}, \{a, b\}, \{a, c, d\}, \{a, b, c, d\}, \{a, b, e\}\}$$

The neighborhood of the point e is

Select the correct option

Reload Math Equations

- $\{a, b, c\}$
- none
- $\{a, b\}$
- $\{a, b, c, e\}$

Question # 5 of 10 (Start time: 12:19:20 PM, 14 June 2022) Total Marks: 1

Which of the following is the basis for an upper limit topology on R (The Set of Real Numbers)?

Select the correct option

Reload Math Equations

- $B_{up} = \{[a, b) \mid a, b \in R\}$
- $B_{up} = \{(a, b) \mid a, b \in R\}$
- $B_{up} = \{[a, b] \mid a, b \in R\}$
- $B_{up} = \{(a, b) \mid a, b \in R\}$

Question # 10 of 10 (Start time: 12:20:08 PM, 14 June 2022) Total Marks: 1

Exterior point of a set is the ..... point of its complement.

Select the correct option

- exterior
- boundary
- limit
- interior



Click to Save Answer & Move to Next Question

Question # 3 of 10 (Start time: 12:08:42 PM, 14 June 2022) **Total Marks: 1**

Let A, B be two subsets of a topological space X. Then

Select the correct option

Reload Math Equations

- $int(A) \cup int(B) \subset int(A \cup B)$
- $int(A \cup B) \subset int(A) \cup int(B)$

Question # 6 of 10 (Start time: 12:09:21 PM, 14 June 2022)

A subset of a topological space X is closed if and only if it contains its

Select the correct option

- boundary
- none
- exterior
- interior

Question # 7 of 10 (Start time: 12:19:53 PM, 14 June 2022) Total Marks: 1

The set of all singletons forms a basis for ..... topology.

Select the correct option

- lower limit
- co finite
- indiscrete
- discrete



Question # 1 of 10 (Start time: 12:24:10 PM, 14 June 2022)

Let A, B be two subsets of a topological space X.

Select the correct option

- none
- If $A \subset B$, then $Int(A) \subset Int(B)$.
- If $A \subset B$, then $Int(A) = Int(B)$.
- If $A \subset B$, then $Int(B) \subset Int(A)$.

Question # 2 of 10 (Start time: 12:25:22 PM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

- $Ext(A) \cap Int(A) = \phi$.
- $Ext(A) \cup Int(A) = \phi$

If B is a basis for a topology T on a set X then every element of T can be written as ..... of the elements of B.

Select the correct option

- difference
- complement
- intersection
- union

Let X be a set, and let $B = \{\{x\} : x \in X\}$. Which of the following statement is true?

Select the correct option

Reload Math Equations

- B is a basis for the topology on X
- B is not a basis for the topology on X

Question # 5 of 10 (Start time: 12:28:30 PM, 14 June 2022)

Let X ={a,b,c,d} with the topology $\tau = \{\phi, \{a\}, \{a,b\}, \{a,c,d\}, X\}$,then which of the following represents a

Select the correct option

- $\tau_A = \{\phi, \{a\}, \{a,b\}, A\}$
- $\tau_A = \{\phi, \{a\}, \{a,c,d\}, A\}$
- $\tau_A = \{\phi, \{a\}, \{a,b\}, \{a,c\}, A\}$
- $\tau_A = \{\phi, \{a\}, \{a,c\}, A\}$

Which of the following statement is true?

Select the correct option

Reload Math Equations

- The collection $B = \{[a, b) \subseteq \mathbb{R} : a < b\}$ of open intervals is a basis on $\mathbb{R}$.
- The collection $B = \{(a, b] \subseteq \mathbb{R} : a < b\}$ of open intervals is a basis on $\mathbb{R}$.
- The collection $B = \{(a, b) \subseteq \mathbb{R} : a < b\}$ of open intervals is a basis on $\mathbb{R}$. ✓
- all of the above

Question # 7 of 10 (Start time: 12:31:02 PM, 14 June 2022) Total Marks: 1

Exterior point of a set is the ..... point of its complement.

Select the correct option

- boundary
- exterior
- interior
- limit

Question # 8 of 10 (Start time: 12:37:49 PM, 14 June 2022) Total Marks: 1

Which of the following is the basis for an upper limit topology on R (The Set of Real Numbers)?

Select the correct option

Reload Math Equations

- $B_{up} = \{[a,b) \mid a,b \in R\}$
- $B_{up} = \{[a,b] \mid a,b \in R\}$
- $B_{up} = \{(a,b] \mid a,b \in R\}$ ✓
- $B_{up} = \{(a,b) \mid a,b \in R\}$

Let $X = \{a, b, c, d, e\}$ with topology $\tau = \{\phi, \{b\}, \{a, d\}, \{a, b, d\}, \{a, c, d, e\}, X\}$. If $A = \{a, b, c\}$, then

Select the correct option

Reload Math Equations

- c is an interior point of A.
- c is not an interior point of A.

Question # 10 of 10 (Start time: 12:33:49 PM, 14 June 2022) Total Marks: 1

Let X be a topological space and A, a subset of X, then

Select the correct option

Reload Math Equations

- $A' = A \cup \bar{A}$
- $\bar{A} = A \cup A'$
- none
- $\bar{A} = A \cap A'$

Click to Save and Move to Next Question

In the discrete space X, convergent sequences must be of the form given below, where b belongs to X

Select the correct option

- none
- $\langle a_1, a_2, \ldots, a_n, b, b, b, \ldots \rangle$
- $\langle a_1, a_2, \ldots \rangle$
- $\langle a_1, a_2, \ldots, a_n, b, b, b \rangle$

In a topological space, the interior of a set A is the union of all

Select the correct option

- closed subsets of A
- open subsets of A

Question # 4 of 10 (Start time: 12:42:23 PM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

- $Ext(A) \cup Int(A) = \phi$
- $Ext(A) \cap Int(A) = \phi$

Question # 6 of 18 (Start time: 12:45:15 PM, 14 June 2022) Total Marks: 1

Let $X=\{a,b,c,d\}$ with the topology $\tau=\{\phi,\{a\},\{a,b\},\{a,c,d\},X\}$, then which of the following represents a subspace topology relative to $A=\{a,b,c\}$?

Select the correct option

Reload Math Equations

- $\tau_A=\{\phi,\{a\},\{a,c\},A\}$
- $\tau_A=\{\phi,\{a\},\{a,b\},A\}$
- $\tau_A=\{\phi,\{a\},\{a,b\},\{a,c\},A\}$
- $\tau_A=\{\phi,\{a\},\{a,c,d\},A\}$

Question # 5 of 10 (Start time: 12:43:32 PM, 14 June 2022)

Let (X, τ) be a topological space, and let $A \subseteq X$. Then

Select the correct option

- Interior of A is an open subset of X not contained in A.
- Interior of A is a closed subset of X contained in A.
- Interior of A is an open subset of X contained in A.
- Interior of A is a closed subset of X not contained in A.

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Question # 5 of 10 (Start time: 12:43:18 PM, 14 June 2022)

Let A, B be two subsets of a topological space X.

Select the correct option

- If $A \subset B$, then $Int(A) \subset Int(B)$.
- none
- If $A \subset B$, then $Int(A) = Int(B)$.
- If $A \subset B$, then $Int(B) \subset Int(A)$.

Question # 2 of 10 (Start time: 11:39:23 AM, 14 June 2022) Total Marks: 1

The basis for usual topology on R is the set of all .....

Select the correct option

- closed intervals
- closed disks
- open intervals
- open disks



Question # 7 of 19 (Start time: 12:46:28 PM, 14 June 2022)

Which of the following is the basis for a K-Topology defined on real line where K is a subset of R?

Select the correct option

- $B_k = \{(a,b) \mid a,b \in R\} \cup \{(a,b) \setminus K \mid a,b \in R\}$
- $B_k = \{[a,b) \mid a,b \in R\} \cup \{[a,b) \setminus K \mid a,b \in R\}$
- $B_k = \{[a,b] \mid a,b \in R\} \cup \{[a,b] \setminus K \mid a,b \in R\}$
- $B_k = \{(a,b) \mid a,b \in R\} \cup \{(a,b] \setminus K \mid a,b \in R\}$

Question # 2 of 10 (Start time: 12:07:24 PM, 14 June 2022) Total Marks: 1

The basis consisting of all _____ in $\mathbb{R}^2$ generates the usual topology on $\mathbb{R}^2$.

Select the correct option

Reload Math Equations

- open balls
- closed balls

Question #9 of 10 (Start time: 11:05:21 AM, 14 June 2022) Total Marks: 1

Boundary point of a set is also called..... point.

Select the correct option

- frontier
- exterior
- interior
- limit

Question # 9 of 10 (Start time: 11:49:09 AM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

- $Ext(A) \cap Int(A) = \phi$.
- $Ext(A) \cup Int(A) = \phi$

MTH634:Quiz No. 2

Question # 9 of 10 (Start time: 11:47:28 AM, 14 June 2022)

In a topological space, the interior of a set A is the

Select the correct option

- largest open subset of A ✓
- smallest open subset of A

If B is a basis for a topology T on a set X then every eleme
of T can be written as ..... of the elements of B.

Select the correct option

- difference
- intersection
- complement
- union



Question # 4 of 10 (Start time: 11:42:10 AM, 14 June 2022)

In a topological space X, let a set G is a neighborhood of each of its point. Then G is

Select the correct option

- open
- closed



Question # 3 of 10 (Start time: 11:41:08 AM, 14 June 2022)

A subset of a topological space has an empty boundary if and only if

Select the correct option

- it is closed
- it is both open and closed. 

Question # 7 of 10 (Start time: 08:45:57 AM, 14 June 2022)

Subset A of a topological space (X, τ) is.....iff $\bar{A} = A$

Select the correct option

- Closed
- open

uestion # 9 of 10 (Start time: 07:00:38 AM, 14 June 2022)

The union of two neighborhoods of a point is not a neighborhood in a topological space.

elect the correct option

○	true
○	false

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MTH634:Quiz No. 2

Question # 1 of 10 (Start time: 11:38:09 AM, 14 June 2022)

A subset of a topological space has an empty boundary if and only if

Select the correct option

- it is both open and closed.
- it is closed

Question # 1 of 10 (Start time: 11:38:14 AM, 14 June 2022)

If A is a subset of a topological space X, then A is open if and only if

Select the correct option

- $A \cap bd(A) \neq \phi$
- $A \cap bd(A) = A$
- $A \cap bd(A) = \phi$
- none

Question # 2 of 10 (Start time: 06:56:57 AM, 14 June 2022)

Consider the sequence (0,0,0,...) with the usual topology of R. The sequence (0,0,0,...)

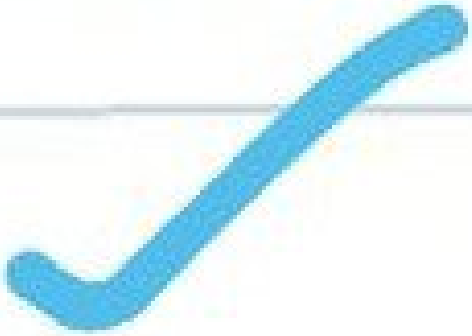
Select the correct option

- converges to -1
- converges to 0
- converges to 1
- non-convergent

Question # 10 of 10 (Start time: 01:17:10 PM, 14 June 2022)

The intersection of two neighborhoods of a point is also its neighborhood in a topological space.

Select the correct option



- False
- True

Let $X = \{a, b, c, d, e\}$ with topology $\tau = \{\phi, \{b\}, \{a, d\}, \{a, b, d\}, \{a, c, d, e\}, X\}$. If $A = \{a, b, c\}$,

...ect the correct option

- a is an interior point of A.
- a is not an interior point of A.

Question # 9 of 10 (Start time: 12:48:27 PM, 14 June 2022)

The following collection is a basis on R^2

Select the correct option

$\mathcal{B} = \{(a, b) \times (c, d) \subset R^2 : a < b, c < d\}$

$B' = \{[a, b) \subseteq R : a < b\}$

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Question # 10 of 10 (Start time: 12:49:26 PM, 14 June 2022)

Closure of a subset A of a topological space X is the intersection of all _____ of X containing A.

Select the correct option

- closed subsets
- subsets
- none of these
- open subsets

Question # 5 of 10 (Start time: 12:43:32 PM, 14 June 2022)

Let (X, τ) be a topological space, and let A

Select the correct option

- Interior of A is an open subset of X not contained in A.
- Interior of A is a closed subset of X contained in A.
- Interior of A is an open subset of X contained in A.
- Interior of A is a closed subset of X not contained in A.

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Question # 4 of 10 (Start time: 12:42:23 PM, 14 June 2022)

If A is a subset of a topological space X, then

Select the correct option

- $Ext(A) \cup Int(A) = \phi$
- $Ext(A) \cap Int(A) = \phi$

Question # 6 of 10 (Start time: 12:09:21 PM, 14 June 2022)

A subset of a topological space X is closed if and only if it contains its

Select the correct option

- boundary
- none
- exterior
- interior

If $X = \{a, b\}$ with topology $T = \{\emptyset, \{a\}, X\}$, then the neighborhoods of a are

Select the correct option

- $\{a\}$ and X
- $\{b\}$ and X
- $\{a, b\}$ and X ✓
- none