DATA for MID TERM ---- MTH634 ---- Module# 001 to 085
Module : 001[IMPORTANT IN MY VIEW]
Topology is combination of two words "Topes (Greeks) means Place" and "Logy (Latin) means Study/Analysis".
Topology is a kind of Math in which we study shapes.
In Geometry we care about exact measurements such as lengths, angles and areas.
In Topology we do not care about measurements.
Geometrically rectangle, triangle, circle and square are different shapes.
By topologically rectangle, triangle, circle and square are same shapes.
In topology we care about arrangement of shapes, relative positions of shapes and Functions/Deformations between the shapes.
By definition topology means "Geometry of positions".
In topology two shapes are considered same if one shape can be deformed to other shape.
For example a circle can be deformed into a square so topologically circle and square are same shapes.
A line and a circle are different shapes.
In fact Topology is a matter of nature of study.
Topological study is more qualitative in nature rather than quantitative.
Module : 001-007[IMPORTANT IN MY VIEW]
Let X be a set and Power set of X is denoted by P(X).
Power set is the collection of all sub sets of a given set.
Usually we use the word **class** for a set of sets.
$\emptyset$ and set itself are also members of power set.
If X is a finite set with "n" elements then number of sets in powers set = 2^n
Let X be a non-empty set and $\boldsymbol{\tau}$ be a subclass of P(X) then $\boldsymbol{\tau}$ is called a topology on X if $\boldsymbol{\tau}$ satisfied the following axioms. (i) $\emptyset \; and \; X \in \boldsymbol{\tau}$ (ii) Union of any numbers of sets in $\boldsymbol{\tau}$ belongs to $\boldsymbol{\tau}$ (iii).The intersection of finite numbers of sets in $\boldsymbol{\tau}$ belongs to $\boldsymbol{\tau}$
The elements of $\boldsymbol{\tau}$ are called open sets or more specifically $\boldsymbol{\tau - Open\ sets}$.
Topology on a set can also be defined by starting only 2nd and 3rd axioms. $\cup\{\boldsymbol{U \in \tau \mid U \in \varphi}\} = \boldsymbol{\varphi}$ **and** $\cap\{\boldsymbol{U \in \tau \mid U \in \varphi}\} = \boldsymbol{X}$
More than one topology can be defined on a set.
Not every collection of subsets of a set is eligible to be a topology on the set unless that collection does not satisfy all the three stated conditions of given definition.
Module : 008-010[IMPORTANT IN MY VIEW]
For any set there are always two special topologies. (i) Indiscrete Topology (ii) Discrete Topology
Indiscrete Topology: A topology on a set X consists of empty set and the set itself is called Indiscrete Topology. It is also called **Trivial Topology**.
Indiscrete topology is the smallest topology that can be defined on some set X.
Discrete Topology: A topology on a set X consists of all subsets of X is called Discrete Topology i.e. $\boldsymbol{\tau = P(X)}$
Discrete topology is the largest topology that can be defined on some set X.
Cofinite Topology: A topology on a set X is the collection of all subsets U of X such that U^c is either finite or

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complete X i.e. $\boldsymbol{\tau_{cof} = \{U \subset X \mid U^c \text{ is finite or } X\}}$
Cofinite topology is also known as "**Finite Complement Topology"**.
Topological Space: *Let* $\boldsymbol{\tau}$ be a topology on X then the pair $(\boldsymbol{X, \tau})$ is a topological space or some times called $\boldsymbol{\tau - Topological\ space}$.
Discrete Space: A set X with discrete topology is called "Discrete Topological Space".
Indiscrete Space: A set X with indiscrete topology is called "Indiscrete Topological Space".
Module : 011-020[IMPORTANT IN MY VIEW]
Arbitrary intersection of open sets may or may not be open.
Openness is a relative term, $\boldsymbol{\varphi \text{ and } X}$ are always open.
Closed Set: Let (X,T) be a topological space. A subset "A" of "X" is closed iff the complement of "A" in "X" is Open i.e $X - A \in \tau$
Closeness is a relative term, $\boldsymbol{\varphi \text{ and } X}$ are always closed.
$\boldsymbol{\varphi \text{ and } X}$ can be open and closed at the same time.
Let (X,T) be a topological space. Consider the collection A={A $\subset \boldsymbol{X \mid A^c \in \tau}$ } i.e. "A" is the set of all those subsets of X whose complement is open. Simply: "Collection of all closed subsets".
Let X={a,b,c,d} and $\boldsymbol{\tau = \{\varphi, \{a\}, \{c\}, \{a,b\}, \{a,c\}, X\}}$ then $\boldsymbol{A = \{X, \{b,c\}, \{a,b\}, \{c\}, \{b\}, \varphi\}}$ is the collection of all closed subsets of X.
Intersection of topologies on a set X is always a topology on set X.
Union of topologies on a set X may or may not be a topology on X.
The real number set $\mathbb{R}$ is one of the most studies or dominant object in Mathematics.
Usual Topology on $\mathbb{R}$: The set of all open sets of $\mathbb{R}$ is Tu called Usual Topology on $\mathbb{R}$.
Real Plan $\mathbb{R}^2$: The real plan is the Cartesian product of two real lines i.e. $\mathbb{R} \times \mathbb{R}$. The real plane is written as $\mathbb{R}^2$
Open Disk: An open disk D(x,y) in $\mathbb{R}^2$ centered at $(x, y) \in \mathbb{R}^2$ is the set of all those points ($\boldsymbol{\acute{x}, \acute{y}}$) in $\mathbb{R}^2$ whose distance from (x,y) is less than "r" where "r" is positive real number.
Let T_1 and T_2 be two topologies on a non empty set X then T_1 is finer than T_2 iff $T_1 \subseteq T_2$
Indiscrete topology is the weakest topology on a set X.
Discrete topology is the finest topology on a set X.
Two topologies on a set X are comparable iff one is finer (weaker) than the other.
Not all topologies on a set X are comparable.
Limit Point: Let (X,T) be a topological space and "A" be a subset of X. A point $x \in X$ is a limit point of A iff every open set Ux containing x contains a point of A different from x.
Limit Point is also called accumulation point or derived point. **[ALSO PREPARE PAGE#50-52]**
Module : 021-030[IMPORTANT IN MY VIEW]
Derived Set: Let (X,T) be a topological space and A be a subset of X then the derived set of A is denoted by $\boldsymbol{\acute{A}}$ and it is the set of all limit points of A i.e. $\boldsymbol{\acute{A} = \{x \in X \mid \forall\, U_x \in T, A \cap (U_x\{x\} \neq \varphi\}}$
Derived set of A may or may not be subset of A.
Derived set of empty set is empty.

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In a discrete space X the derived set $\acute{A}$ of any subset A of X is empty.
Let (X,T) be a topological space and Let $A, B \subset X$. If $A \subset B$ then $\acute{A} \subset \acute{B}$
Let (X,T) be a topological space and Let $A, B \subset X$ then $A \subset B$ then $(\acute{AUB}) = \acute{A}\ U\ \acute{B}$
Prepare Page # 61-62
A subset "A" of a topological space X is closed iff $A \subset A$
Let (X,T) be a topological space and "A" be a subset of X. The closure of "A" is denoted by $\bar{A}$ and it 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.
Remember: $A \subset \bar{A}, \bar{\varphi} = \varphi, \ \bar{X} = X$
Let A be a subset of a topological space X then $\bar{A} = AU\acute{A}$
Let A be a subset of a topological space X then (i) $\bar{A}$ is closed subset of X (ii) "A" is closed iff $\bar{A} = A$ (iii) $\overline{(\bar{A})} = A$
Prepare Page#78-79
Let X be a topological space and $A, B \subset X$ then $\overline{(AUB)} = \bar{A}U\bar{B}$
Let A be a subset of a topological space X then A is said dense in X iff $\bar{A}$=X
Let $X = \mathbb{R}$ with usual topology and consider Q then $\bar{Q} = \mathbb{R}$
Q is dense in $\mathbb{R}$.
N is not dense in $\mathbb{R}$.
X is dense in itself.
A proper closed subset of X can never dense in X.
Module : 031-040[IMPORTANT IN MY VIEW]
Boundary points are also called frontier Points.
bd(A) is closed.
Boundary of a set A is empty iff A is both open and close.
Let P be a point in a topological space (X,T). A subset N of X is a neighborhood of p iff there exists an open set Up such that $p \in Up \subset N$
Let P be a point in a topological space (X,T then N is neighborhood of "p" iff "p" is an interior point of N.
A neighborhood N of a point "p" is called an open neighborhood iff N is a neighborhood of all its points i.e. N is an open set.
The class of all neighborhoods of $p \in X$ is called neighborhood system of "p". It is denoted by "Np".
Let Np is the neighborhood system of "p" then Np is non-empty.
Let Np is the neighborhood system of "p" then Np is closed under finite set intersection.
Let Np is the neighborhood system of "p" then every superset of a member of Np belongs to Np.
Module : 041-050[IMPORTANT IN MY VIEW]
Subspace Topology: Let A be a nonempty subset of a topological space (X,T) Then the collection T_A={V=U$\bigcap A \mid U \in T$} of subsets of defines a topology on A. T_A is called subspace topology or relative topology on A relatives to (X,T).

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Let (X,T) be a topological space. A sub collection $B \subset T$ is called basis for T iff for all $U \in T$ and for all $x \in U$ there exists $B \in B$ such that $x \in B \subset U$.
If B is basis for a topology T on X then every element of T can be written as union of the elements of B.
Prepare p# 113
The lower limit topology on $\mathbb{R}$ is denoted by $\mathbb{R}_L$ and $\mathbb{R}_L = \{[a,b)\|a,b \in \mathbb{R}\}$
The Upper limit topology on $\mathbb{R}$ is denoted by $\mathbb{R}_{up}$ and $\mathbb{R}_{up} = \{(a,b]\|a,b \in \mathbb{R}\}$
Module : 051-085 [IMPORTANT IN MY VIEW]
Any class A of subsets of a non empty set X is a sub basis for a unique topology T on X.
Let T_1 and T_2 be two topologies on non empty set X then $T_1 \cup T_2$ may or may not be a topology on X. If $T_1 \cup T_2$ is topology on X then it will be the smallest topology containing both T_1 and T_2.
Let T_1 and T_2 be two topologies on non empty set X then $T_1 \cap T_2$ is topology on X then it will be the largest topology containing both T_1 and T_2.
Continuous Function: Let (X,Tx) and (Y,Ty) be two topological spaces. A function f:x$\rightarrow y$ is continuous iff for all $u \in Ty$ there exist $v \in Tx$ such that $f^{-1}(u)=v$.
Prepare P#147
Constant Function: A function whose image is singleton i.e. whose output is the same for every point is called constant function.
A map f : (X,Tx) →(Y,Ty) is called an open map iff the image of each open subset of X is open in Y.
Important Short/Long Questions
Open mapping theorem Prove…..5 marks…….P#183
Dense Subset……..5 marks…….P#81
Investigate Continuity……5 marks
Limit Point…….2 marks…….P#50
Inverse of image continuity ……. 2 marks
Define neighborhood of a point……2 marks…….P#100
Explain indiscrete space is not Metrizable …… 2 marks
Show there is no homeomorphism in open and close interval of R……. 2 marks
Derived set…… 3 marks…….P#54
Find continuity of point …… 3 marks…….P#172
Define relative Open set ……2 marks
Find exterior, interior and boundary open of given set…….5 marks…….P#87,93

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MC170201745: Shakeel Ahmad

Time Left 21 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 1 of 6 (Start time: 08:09:38 AM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- (●) {b,d}
- ( ) {c}
- ( ) {d}
- ( ) none

Click to Save Answer & Move to Next Question

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MC170201745: Shakeel Ahmad

Time Left 67 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 5 of 6 (Start time: 08:12:43 AM, 20 May 2018) Total Marks: 1

Let $\{T_i | i \in I\}$ be any collection of topologies on set X. Then $\bigcap_{i \in I} T_i$ is :

Select the correct option

Reload Math Equations

- not a topology
- a topology
- empty set
- empty

Click to Save Answer & Move to Next Question

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Google

MC170203179: Zeshan Rafiq

Time Left 61 sec(s)

MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 2 of 6 (Start time: 10:17:00 PM, 22 May 2018)

Total Marks: 1

Let X be a nonempty set and τ be a topology on X, then the following statements must be true. $(where\ P(X)\ denotes$ the power set of $X)$

Select the correct option

Reload Math Equations

- ○ $\tau \subset X$
- ○ $X \subset \tau$
- ● $\tau \subset P(X)$
- ○ none

Click to Save Answer & Move to Next Question

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MC170202886: Aqsa Zunaira

Time Left 68 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 5 of 6 (Start time: 06:04:43 PM, 20 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- (b,d)
- {c}
- {d}
- none

Click to Save Answer & Move to Next Question

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MC170202886: Aqsa Zunaira

Time Left 65 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 1 of 6 (Start time: 06:02:10 PM, 20 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set represents a topology on* X.

Select the correct option

Reload Math Equations

- (φ,{a},{a,b},X}
- (φ,{a},{b},X}
- (φ,{a},{b,c},X}
- (φ,{c},{a,b},X}

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MC170202886: Aqsa Zunaira

Time Left 54 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 3 of 6 (Start time: 06:03:39 PM, 20 May 2018)

Total Marks: 1

The set of all open intervals of $\mathbb{R}$ is a topology on $\mathbb{R}$, called

Select the correct option

Reload Math Equations

- discrete topology
- cofinite topology
- real topology
- usual topology

Click to Save Answer & Move to Next Question

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2

MC170202458: Aneeta Shaheen

Time Left 71 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 5 of 6 (Start time: 07:36:31 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c\}$. *The following set* is *a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{b},{c},X}
- {φ,{a},{b},X}
- {φ,{a},{b,c},X}
- none

Click to Save Answer & Move to Next Question

6.4.

→ If A is a subset of a topological space X, then explain why $Ext(A) \cap Int(A) = \phi$.

→ Consider the topology

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

on $X = \{a, b, c, d, e\}$ Determine the derived set of $A = \{a, b, c\}$

→ Consider the following topology on $X = \{a, b, c, d$

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

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

→ find the interior points of subset $A = \{a, b, c,\}$ of X

- find the exterior points of A
→ boundary points of A.

→ Let $X = \{x, y, z\}$, $T = \{\{1\}, \{2, 3\}\}$, $T_1 = \{\phi, \{$

$$T_2 = \{\phi, \{1\}, T\}$$

Give an example to show that the Union of two topology need to be

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MC170200830: Kainat Ashfaq

Time Left 17 sec(s)

MTH634:Quiz No. 2

Quiz Start Time: 02:39 PM, 14 August 2018

Question # 1 of 4 (Start time: 02:39:20 PM, 14 August 2018)

Total Marks: 1

If (X, τ) be a compact Hausdorff space then (X, τ) is not normal.

Select the correct option

Reload Math Equations

- (●) True
- ( ) False

Click to Save Answer & Move to Next Question

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2

MC170201745: Shakeel Ahmad

Time Left 18 sec(s)

MTH634:Quiz No. 2

Quiz Start Time: 09:29 AM, 14 August 2018

Question # 3 of 4 (Start time: 09:31:13 AM, 14 August 2018)

Total Marks: 1

A topological space X is called a connected space iff there exists a pair of subsets of X both nonempty and both open and closed.

Select the correct option

Reload Math Equations

- True
- False

Click to Save Answer & Move to Next Question

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MC170200830: Kainat Ashfaq

Time Left 58 sec(s)

MTH634:Quiz No. 2

Quiz Start Time: 02:39 PM, 14 August 2018

Question # 4 of 4 (Start time: 02:43:18 PM, 14 August 2018)

Total Marks: 1

Which of the following statement is false?

Select the correct option

- A set X with indiscrete topology is compact.
- A set X with any topology containing finite number subsets of X is compact.
- A finite set X with any topology is compact.
- An infinite set X with discrete topology is compact.

Click to Save Answer & Move to Next Question

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MC170200830: Kainat Ashfaq

Time Left 83 sec(s)

MTH634:Quiz No. 2

Quiz Start Time: 02:39 PM, 14 August 2018

Question # 2 of 4 (Start time: 02:41:37 PM, 14 August 2018)

Total Marks: 1

Every discrete space is not a regular space.

Select the correct option

- True
- False

Click to Save Answer & Move to Next Question

TOPOLOGY MY PAPER

int (A) Ext(A) and boundary of A.

mcqs are mosttly fron chapter # 5

ext(A complmnt) =int (A) prove

basis

closure of a set

Lightening

why (intA b(A)) complemnt=ext(A)

Lightening

discrete topology

TOPOLOGY MY PAPER

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discrete topology

MTh 634 Topology

1. Prove that $\bar{\emptyset} = \emptyset$

2. A function $f: (X, T_X) \to (Y, T_Y)$ is continuous iff the inverse image of every membel of basis is an open subset of X.

3. Construct a topological space in which open sets are identical to closed set.

4. let (X, T) be an indiscrete topological space - Find the closure of the set & Also find the Dense set.

① In topological space Prove that $\bar{\bar{X}} = X$ (2 Marks)

② A function $f:(X,\tau_X) \to (Y,\tau_Y)$ is Continuous iff the Inverse of every closed Subset of Y under f is closed in X (5 Marks) (Module 75)

③ Show that if $f:(X,\tau_X) \to (Y,\tau_Y)$ is Continuous iff the inverse image of each member of a basis By for τ_Y is an open subset of X (3 Marks) (Module 74)

④ Show that for a Subset A of topological space X, if a derived set of A is contained in A $A^d \subset A$ then A is closed 5 Marks

⑤ Let $f:(X,\tau_X) \to (Y,\tau_Y)$ is Continuous. Then define Continuity at point $p \in X$ 2 Marks

⑥ Construct a topological space in which open sets are identical to closed set 3 Marks

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2

MC170202458: Aneeta Shaheen

Time Left 67 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 1 of 6 (Start time: 07:34:11 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is *a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{a},{b},{c},X}
- {φ,{c,d},{b,c,d},X}
- {φ,{a},{b},X}
- none

Click to Save Answer & Move to Next Question

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2

MC170202458: Aneeta Shaheen

Time Left 32 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 2 of 6 (Start time: 07:34:39 PM, 20 May 2018)

Total Marks: 1

If in a topology τ on X, all subsets of X are called open and closed, then τ is called :

Select the correct option

Reload Math Equations

- discrete space
- indiscrete space
- metric space
- none

Click to Save Answer & Move to Next Question

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MC170202458: Aneeta Shaheen

Time Left 73 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 3 of 6 (Start time: 07:35:49 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- (b,d)
- (c)
- (d)
- none

Click to Save Answer & Move to Next Question

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2

MC170202458: Aneeta Shaheen

Time Left 80 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 4 of 6 (Start time: 07:36:10 PM, 20 May 2018)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- closed set
- open sets
- derived set
- dense set

Click to Save Answer & Move to Next Question

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MC170202886: Aqsa Zunaira

Time Left 72 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 4 of 6 (Start time: 06:04:19 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is not *a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{a},{a,b},X}
- {φ,{a},{b},X}
- {φ,{a},{a,c},X}
- {φ,{a},{a,d},X}

Click to Save Answer & Move to Next Question

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MC170202886: Aqsa Zunaira

Time Left 60 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 6 of 6 (Start time: 06:05:09 PM, 20 May 2018)

Total Marks: 1

Let $X = \{2, 4, 5, 7\}$. *The following set represents a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{2},{4,5},X}
- {φ,{2},{4,5,7},X}
- {φ,{2},{5,7},X}
- {φ,{2},{4},{5},X}

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MC170203179: Zeshan Rafiq

Time Left 73 sec(s)

MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 4 of 6 (Start time: 10:18:12 PM, 22 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set represents a topology on* X.

Select the correct option

Reload Math Equations

●	{φ,{a},{a,b},X}
○	{φ,{a},{b},X}
○	{φ,{a},{b,c},X}
○	{φ,{c},{a,b},X}

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MC170203179: Zeshan Rafiq

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MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 3 of 6 (Start time: 10:17:42 PM, 22 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is *a topology on* X.

Select the correct option

Reload Math Equations

○	{φ,{a},{b},{c},X}
●	{φ,{c,d},{b,c,d},X}
○	{φ,{a},{b},X}
○	none

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MC170203179: Zeshan Rafiq

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MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 1 of 6 (Start time: 10:16:23 PM, 22 May 2018) **Total Marks: 1**

The trivial topology is also called:

Select the correct option

- ○ Discrete topology
- ○ Complete topology
- ● Indiscrete topology
- ○ none

Click to Save Answer & Move to Next Question

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10:17 PM
5/22/2018

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=2ddd4ef7-f31b-4774-b593-b1c4f6eaf054
Google

MC170201745: Shakeel Ahmad

Time Left 81 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 6 of 6 (Start time: 08:13:25 AM, 20 May 2018) **Total Marks: 1**

The smallest topology one can define on some set is called:

Select the correct option

Reload Math Equations

- (●) indiscrete topology
- ( ) discrete topology
- ( ) comparable topology
- ( ) usual topology

Click to Save Answer & Move to Next Question

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LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=a2fba6b8-c403-4c75-8b39-dcceb0e4b769
Google

MC170201745: Shakeel Ahmad

Time Left 73 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 4 of 6 (Start time: 08:12:04 AM, 20 May 2018) Total Marks: 1

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

Select the correct option

Reload Math Equations

- closed set
- open sets
- derived set
- dense set

Click to Save Answer & Move to Next Question

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5/20/2018

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=c5946a4a-988d-4878-86ee-69d486e16081
Google

MC170201745: Shakeel Ahmad

Time Left 68 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 3 of 6 (Start time: 08:11:37 AM, 20 May 2018) **Total Marks: 1**

The trivial topology is also called:

Select the correct option

- ○ Discrete topology
- ○ Complete topology
- ● Indiscrete topology
- ○ none

Click to Save Answer & Move to Next Question

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5/20/2018

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=7c76ae18-b905-4648-8b8c-564b4a0b6ec3
Google

MC170201745: Shakeel Ahmad

Time Left 61 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 2 of 6 (Start time: 08:10:51 AM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is not *a topology on* X.

Select the correct option

Reload Math Equations

○	{φ,{a},{a,b},X}
●	{φ,{a},{b},X}
○	{φ,{a},{a,c},X}
○	{φ,{a},{a,d},X}

Click to Save Answer & Move to Next Question

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5/20/2018

MC170201745: Shakeel Ahmad

Time Left 36 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 1 of 6 (Start time: 08:09:38 AM, 20 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- {b,d}
- {c}
- {d}
- none

Click to Save Answer & Move to Next Question

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=13adb37c-a815-4689-9688-0faea52886e3
Google

MC170201745: Shakeel Ahmad

Time Left 21 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 1 of 6 (Start time: 08:09:38 AM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- (●) {b,d}
- ( ) {c}
- ( ) {d}
- ( ) none

Click to Save Answer & Move to Next Question

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8:10 AM
5/20/2018

MC170201745: Shakeel Ahmad

Time Left 36 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 1 of 6 (Start time: 08:09:38 AM, 20 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- {b,d}
- {c}
- {d}
- none

Click to Save Answer & Move to Next Question

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=7c76ae18-b905-4648-8b8c-564b4a0b6ec3
Google

MC170201745: Shakeel Ahmad

Time Left 61 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 2 of 6 (Start time: 08:10:51 AM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is not *a topology on* X.

Select the correct option

Reload Math Equations

○	{φ,{a},{a,b},X}
●	{φ,{a},{b},X}
○	{φ,{a},{a,c},X}
○	{φ,{a},{a,d},X}

Click to Save Answer & Move to Next Question

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LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=c5946a4a-988d-4878-86ee-69d486e16081
Google

MC170201745: Shakeel Ahmad

Time Left 68 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 3 of 6 (Start time: 08:11:37 AM, 20 May 2018) **Total Marks: 1**

The trivial topology is also called:

Select the correct option

- ○ Discrete topology
- ○ Complete topology
- ● Indiscrete topology
- ○ none

Click to Save Answer & Move to Next Question

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LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=a2fba6b8-c403-4c75-8b39-dcceb0e4b769
Google

MC170201745: Shakeel Ahmad

Time Left 73 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 4 of 6 (Start time: 08:12:04 AM, 20 May 2018) Total Marks: 1

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

Select the correct option

Reload Math Equations

- closed set
- open sets
- derived set
- dense set

Click to Save Answer & Move to Next Question

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5/20/2018

MC170201745: Shakeel Ahmad

Time Left 67 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 5 of 6 (Start time: 08:12:43 AM, 20 May 2018) Total Marks: 1

Let $\{T_i | i \in I\}$ be any collection of topologies on set X. Then $\bigcap_{i \in I} T_i$ is :

Select the correct option

Reload Math Equations

- not a topology
- a topology
- empty set
- empty

Click to Save Answer & Move to Next Question

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=2ddd4ef7-f31b-4774-b593-b1c4f6eaf054
Google

MC170201745: Shakeel Ahmad

Time Left 81 sec(s)

MTH634:Quiz 1

Quiz Start Time: 08:09 AM, 20 May 2018

Question # 6 of 6 (Start time: 08:13:25 AM, 20 May 2018) **Total Marks: 1**

The smallest topology one can define on some set is called:

Select the correct option

Reload Math Equations

- (●) indiscrete topology
- ( ) discrete topology
- ( ) comparable topology
- ( ) usual topology

Click to Save Answer & Move to Next Question

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Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=a9a54947-38b5-461e-8da6-1f78051dc0da
Google

MC170203179: Zeshan Rafiq

Time Left 57 sec(s)

MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 1 of 6 (Start time: 10:16:23 PM, 22 May 2018) **Total Marks: 1**

The trivial topology is also called:

Select the correct option

- ○ Discrete topology
- ○ Complete topology
- ● Indiscrete topology
- ○ none

Click to Save Answer & Move to Next Question

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LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=15f9895b-eabb-411c-aebb-d51ed6d8156b
Google

MC170203179: Zeshan Rafiq

Time Left 61 sec(s)

MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 2 of 6 (Start time: 10:17:00 PM, 22 May 2018)

Total Marks: 1

Let X be a nonempty set and τ be a topology on X, then the following statements must be true. $(where\ P(X)\ denotes$ the power set of $X)$

Select the correct option

Reload Math Equations

- ○ $\tau \subset X$
- ○ $X \subset \tau$
- ● $\tau \subset P(X)$
- ○ none

Click to Save Answer & Move to Next Question

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5/22/2018

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=3a5146ef-c60c-4c03-ac51-d788f44075c8
Google

MC170203179: Zeshan Rafiq

Time Left 73 sec(s)

MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 4 of 6 (Start time: 10:18:12 PM, 22 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set represents a topology on* X.

Select the correct option

Reload Math Equations

●	{φ,{a},{a,b},X}
○	{φ,{a},{b},X}
○	{φ,{a},{b,c},X}
○	{φ,{c},{a,b},X}

Click to Save Answer & Move to Next Question

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5/22/2018

LMS-Virtual University of Paki
Quiz
quiz.vu.edu.pk/QuizQuestion.aspx?ver=2c6e8467-0590-499a-87fd-5a01ec6c994c
Google

MC170203179: Zeshan Rafiq

Time Left 69 sec(s)

MTH634:Quiz 1

Quiz Start Time: 10:16 PM, 22 May 2018

Question # 3 of 6 (Start time: 10:17:42 PM, 22 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is *a topology on* X.

Select the correct option

Reload Math Equations

○	{φ,{a},{b},{c},X}
●	{φ,{c,d},{b,c,d},X}
○	{φ,{a},{b},X}
○	none

Click to Save Answer & Move to Next Question

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6:05 68%

quiz.vu.edu.pk/QuizQuestion.aspx 2

MC170202886: Aqsa Zunaira

Time Left 68 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 5 of 6 (Start time: 06:04:43 PM, 20 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- (b,d)
- {c}
- {d}
- none

Click to Save Answer & Move to Next Question

6:05 68%

quiz.vu.edu.pk/QuizQuestion.aspx 2

MC170202886: Aqsa Zunaira

Time Left 60 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 6 of 6 (Start time: 06:05:09 PM, 20 May 2018)

Total Marks: 1

Let $X = \{2, 4, 5, 7\}$. *The following set represents a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{2},{4,5},X}
- {φ,{2},{4,5,7},X}
- {φ,{2},{5,7},X}
- {φ,{2},{4},{5},X}

Click to Save Answer & Move to Next Question

6:04 68%

quiz.vu.edu.pk/QuizQuestion.aspx 2

MC170202886: Aqsa Zunaira

Time Left 72 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 4 of 6 (Start time: 06:04:19 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is not *a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{a},{a,b},X}
- {φ,{a},{b},X}
- {φ,{a},{a,c},X}
- {φ,{a},{a,d},X}

Click to Save Answer & Move to Next Question

6:02 68%

quiz.vu.edu.pk/QuizQuestion.aspx 2

MC170202886: Aqsa Zunaira

Time Left 65 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 1 of 6 (Start time: 06:02:10 PM, 20 May 2018) Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set represents a topology on* X.

Select the correct option

Reload Math Equations

- (φ,{a},{a,b},X}
- (φ,{a},{b},X}
- (φ,{a},{b,c},X}
- (φ,{c},{a,b},X}

Click to Save Answer & Move to Next Question

6:04 68%

quiz.vu.edu.pk/QuizQuestion.aspx 2

MC170202886: Aqsa Zunaira

Time Left 54 sec(s)

MTH634:Quiz 1

Quiz Start Time: 06:02 PM, 20 May 2018

Question # 3 of 6 (Start time: 06:03:39 PM, 20 May 2018)

Total Marks: 1

The set of all open intervals of $\mathbb{R}$ is a topology on $\mathbb{R}$, called

Select the correct option

Reload Math Equations

- discrete topology
- cofinite topology
- real topology
- usual topology

Click to Save Answer & Move to Next Question

7:36 63%

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2

MC170202458: Aneeta Shaheen

Time Left 71 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 5 of 6 (Start time: 07:36:31 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c\}$. *The following set* is *a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{b},{c},X}
- {φ,{a},{b},X}
- {φ,{a},{b,c},X}
- none

Click to Save Answer & Move to Next Question

7:36 63%

quiz.vu.edu.pk/QuizQuestion.asp

2

MC170202458: Aneeta Shaheen

Time Left 80 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 4 of 6 (Start time: 07:36:10 PM, 20 May 2018)

Total Marks: 1

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

Select the correct option

Reload Math Equations

- closed set
- open sets
- derived set
- dense set

Click to Save Answer & Move to Next Question

7:34 63%

quiz.vu.edu.pk/QuizQuestion.asp

2

MC170202458: Aneeta Shaheen

Time Left 67 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 1 of 6 (Start time: 07:34:11 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$. *The following set* is *a topology on* X.

Select the correct option

Reload Math Equations

- {φ,{a},{b},{c},X}
- {φ,{c,d},{b,c,d},X}
- {φ,{a},{b},X}
- none

Click to Save Answer & Move to Next Question

7:36 63%

quiz.vu.edu.pk/QuizQuestion.aspx 2

MC170202458: Aneeta Shaheen

Time Left 73 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 3 of 6 (Start time: 07:35:49 PM, 20 May 2018)

Total Marks: 1

Let $X = \{a, b, c, d\}$ *and* $\tau = \{\phi, \{c\}, \{a, c\}, \{b, c, d\}, X\}$ *be a topology on* X. The closed set in X is:

Select the correct option

Reload Math Equations

- (b,d)
- (c)
- (d)
- none

Click to Save Answer & Move to Next Question

7:35 63%

quiz.vu.edu.pk/QuizQuestion.asp

2

MC170202458: Aneeta Shaheen

Time Left 32 sec(s)

MTH634:Quiz 1

Quiz Start Time: 07:34 PM, 20 May 2018

Question # 2 of 6 (Start time: 07:34:39 PM, 20 May 2018)

Total Marks: 1

If in a topology τ on X, all subsets of X are called open and closed, then τ is called :

Select the correct option

Reload Math Equations

- discrete space
- indiscrete space
- metric space
- none

Click to Save Answer & Move to Next Question