



# MTH202 QUIZ(1)

Lecture: 10 to 15

## **RIZ MUGHAL** **SQA ENGINEER:**

I'm providing 100% correct quiz solution.

You can visit my YouTube channel for more quiz solution, also final year project including project assignments, and viva.

## **YOUTUBE:**

<https://www.youtube.com/channel/UCINsFwDiB62SValCcPDZbRQ/playlists>

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<https://www.facebook.com/groups/923887914750307>

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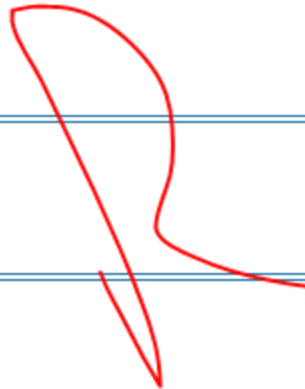
Question # 1 of 10 ( Start time: 08:21:29 AM, 31 May 2021 )

Range of function  $\{f(x) = \{e^x\}\}$  is.....

Select the correct option

- |                                  |                              |
|----------------------------------|------------------------------|
| <input type="radio"/>            | Set of Real number           |
| <input type="radio"/>            | Set of negative Real number. |
| <input checked="" type="radio"/> | Set of positive Real numbers |
| <input type="radio"/>            | Set of integers              |

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Question # 2 of 10 ( Start time: 08:21:51 AM, 31 May 2021 )

Composite Relation symbolically written as \_\_\_\_\_.

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | $SoR = \{(a,c)   a \in A, c \in C, \exists b \in B, (a,b) \in R \text{ and } (b,c) \in S\}$ |
| <input type="radio"/>            | None of the above   |
| <input checked="" type="radio"/> | $SoR = \{(a,c)   a \in A, c \in C, \exists b \in B, (a,b) \in R \text{ and } (b,c) \in S\}$ |
| <input type="radio"/>            | $SoR = \{(a,c)   a \in A, c \in C, \exists b \in B, (a,b) \in R \text{ and } (b,c) \in S\}$ |

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Question # 3 of 10 ( Start time: 08:22:08 AM, 31 May 2021 )

If  $x \equiv 17 \pmod{5}$  Which of the following integers are valid solution for x ?

Select the correct option

- |                                  |     |
|----------------------------------|-----|
| <input type="radio"/>            | -44 |
| <input type="radio"/>            | 8   |
| <input type="radio"/>            | 4   |
| <input checked="" type="radio"/> | 12  |

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Question # 4 of 10 ( Start time: 08:22:20 AM, 31 May 2021 )

Range of the relation  $\{(0,1),(3,22),(90,34)\}$   
is \_\_\_\_\_.

Select the correct option

- |                                  |                  |
|----------------------------------|------------------|
| <input type="radio"/>            | {0,3,90}         |
| <input type="radio"/>            | {0,1,3}          |
| <input checked="" type="radio"/> | {1,22,34}        |
| <input type="radio"/>            | {0,1,3,22,90,34} |

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Question # 5 of 10 ( Start time: 08:22:33 AM, 31 May 2021 )

Total M

Let  $A = \{0, 1, 2\}$  and  $R = \{(0,2), (1,1), (2,0)\}$  be a relation on  $A$ . Then which of the following ordered pairs are needed to make it transitive?

Select the correct option

- |                                  |                 |
|----------------------------------|-----------------|
| <input type="radio"/>            | (2,0) and (2,2) |
| <input type="radio"/>            | (2,0) and (0,2) |
| <input checked="" type="radio"/> | (0,0) and (2,2) |
| <input type="radio"/>            | (0,0) and (0,2) |

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Question # 6 of 10 ( Start time: 08:22:46 AM, 31 May 2021 )

Operation of subtraction is a binary operation on the set of .....

Select the correct option

- |                                  |                   |
|----------------------------------|-------------------|
| <input checked="" type="radio"/> | Integers          |
| <input type="radio"/>            | Positive integers |
| <input type="radio"/>            | Whole numbers     |
| <input type="radio"/>            | Natural numbers   |

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## Question # 7 of 10 ( Start time: 08:23:01 AM, 31 May 2021 )

Let  $S = \mathbb{R}$  and define the "square" relation  $R = \{(x, y) | x^2 = y^2\}$ . The square relation is an \_\_\_\_\_ relation.

Select the correct option

[Reload M](#)

<input checked="" type="radio"/>	Equivalence relation
<input type="radio"/>	Not equivalence relation

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*R*



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Question # 8 of 10 ( Start time: 08:23:16 AM, 31 May 2021 )

The logic gate NOT is a uniry operation on  $\{0,1\}$ .

Select the correct option

<input checked="" type="radio"/>	True
<input type="radio"/>	False

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Question # 9 of 10 ( Start time: 08:23:31 AM, 31 May 2021 )

Let  $A = \{1, 2\}$ , then  $P(A) =$  \_\_\_\_\_.

Select the correct option

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

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Question # 10 of 10 ( Start time: 08:23:43 AM, 31 May 2021 )

Total

If a relation  $R$  is reflexive, anti symmetric and transitive then which of the following is not true for the inverse relation.

Select the correct option

- inverse relation will be irreflexive.
- inverse relation will be transitive.
- inverse relation will be anti symmetric.
- inverse relation will be reflexive.

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2<sup>nd</sup> account

## Question # 1 of 10 ( Start time: 08:25:39 AM, 31 May 2021 )

Let R be a binary relation on a set A. R is anti-symmetric iff \_\_\_\_\_.

Select the correct option

- |                                  |  |
|----------------------------------|--|
| <input type="radio"/>            | $a, b \in A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a \neq b$    |
| <input type="radio"/>            | $a, b \notin A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a \neq b$ |
| <input checked="" type="radio"/> | $a, b \in A$ if $(a,b) \in R$ and $(b,a) \in R$ then $a = b$       |
| <input type="radio"/>            | None of the above  |
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-

Question # 2 of 10 ( Start time: 08:25:57 AM, 31 May 2021 )

"-" is a binary operation on the set of integers  $\mathbb{Z}$ .

Select the correct option

<input checked="" type="radio"/>	True
<input type="radio"/>	False

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Question # 3 of 10 ( Start time: 08:26:15 AM, 31 May 2021 )

The inverse relation  $R^{-1}$  from B to A is defined as \_\_\_\_\_.

Select the correct option


- |                                  |  |
|----------------------------------|--|
| <input type="radio"/>            | $R^{-1} = \{(b,a) \in B \times A \mid (b,a) \in R\}$ |
| <input checked="" type="radio"/> | $R^{-1} = \{(b,a) \in B \times A \mid (a,b) \in R\}$ |
| <input type="radio"/>            | $R^{-1} = \{(b,a) \in B \times A \mid (a,b) \in R\}$ |
| <input type="radio"/>            | None of the above                                    |

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Question # 4 of 10 ( Start time: 08:26:28 AM, 31 May 2021 )

Which of the following is always true for the matrix representation of a symmetric relation?

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input checked="" type="radio"/> | Matrix is equal to its transpose.           |
| <input type="radio"/>            | Matrix has always 0 in its diagonal entries |
| <input type="radio"/>            | Matrix is singular                          |
| <input type="radio"/>            | Matrix has always 1 in its diagonal entries |
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Question # 5 of 10 ( Start time: 08:26:49 AM, 31 May 2021 )

Let  $A = \{1,2,3,4\}$  and let  $R$  and  $S$  be transitive binary relations on  $A$  defined as:  
 $R = \{(1,2), (1,3), (2,2), (3,3), (4,2), (4,3)\}$  and  $S = \{(2,1), (2,4), (3,3)\}$  Then  
 $R \cup S = \{(1,2), (1,3), (2,1), (2,2), (2,4), (3,3), (4,2), (4,3)\}$ .

Select the correct option

<input type="radio"/>	R union S is transitive
<input checked="" type="radio"/>	R union S is not transitive

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Question # 6 of 10 ( Start time: 08:27:04 AM, 31 May 2021 )

Let  $S = \mathbb{R}$  and define the "square" relation  $R = \{(x, y) | x^2 = y^2\}$ . The square relation is an \_\_\_\_\_ relation.

Select the correct option

[Reload](#)

<input type="radio"/>	Not equivalence relation
<input checked="" type="radio"/>	Equivalence relation

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Question # 7 of 10 ( Start time: 08:27:18 AM, 31 May 2021 )

If  $x \equiv -10 \pmod{15}$  Which of the following integers are valid solution for x ?

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | 6 |
| <input type="radio"/>            | 3 |
| <input type="radio"/>            | 7 |
| <input checked="" type="radio"/> | 5 |
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Question # 8 of 10 ( Start time: 08:27:33 AM, 31 May 2021 )

Let  $R$  be a binary relation on a set  $A$ . If  $R$  is anti symmetric then \_\_\_\_\_ .

Select the correct option

- |                                  |                                  |
|----------------------------------|----------------------------------|
| <input type="radio"/>            | Inverse of $R$ is symmetric      |
| <input checked="" type="radio"/> | Inverse of $R$ is anti symmetric |
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## Question # 9 of 10 ( Start time: 08:27:47 AM, 31 May 2021 )

If  $A = \{1, 2, 3\}$  is a set and  $R = \{(1, 2), (2, 2), (2, 1)\}$  is a relation on  $A$ ,  $R$  is

Select the correct option

<input type="radio"/>	None of these
<input type="radio"/>	Transitive
<input type="radio"/>	Reflexive
<input checked="" type="radio"/>	Symmetric

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Question # 10 of 10 ( Start time: 08:28:02 AM, 31 May 2021 )

Total Mark

Let  $A = \{0, 1\}$  and  $B = \{1\}$ . Let  $R$  and  $S$  be two binary relations on Cartesian product of  $A$  and  $B$  such that  $R = \{(0, 1)\}$  and  $S = \{(1, 1)\}$ . Then  $R \cap S =$  \_\_\_\_\_.

Select the correct option

- {0, 1}
- {1, 1}
- empty
- {(0, 1)}

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Question # 1 of 10 ( Start time: 03:18:22 PM, 31 May 2021 )

The domain of a relation R from A to B is symbolically written as:

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input checked="" type="radio"/> | $D(R) = \{a \text{ belongs to } A \text{ such that } (a,b) \text{ belongs to } R\}$ |
| <input type="radio"/>            | $D(R) = \{a \text{ belongs to } B \text{ such that } (a,b) \text{ belongs to } R\}$ |

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Question # 2 of 10 ( Start time: 03:18:49 PM, 31 May 2021 )

Which of the following is not a type of a Relation?

Select the correct option

- |                                  |             |
|----------------------------------|-------------|
| <input type="radio"/>            | Reflexive   |
| <input type="radio"/>            | Symmetric   |
| <input type="radio"/>            | Transitive  |
| <input checked="" type="radio"/> | Permutation |

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Question # 3 of 10 ( Start time: 03:19:01 PM, 31 May 2021 )

Let  $A = \{a, b\}$  then  $P(A) =$ 

Select the correct option

Relo

- |                                  |                                    |
|----------------------------------|------------------------------------|
| <input type="radio"/>            | $\{\phi, \{a, b\}\}$               |
| <input type="radio"/>            | $\{\{a\}, \{b\}\}$                 |
| <input checked="" type="radio"/> | $\{\phi, \{a\}, \{b\}, \{a, b\}\}$ |
| <input type="radio"/>            | $\{\phi, \{a\}, \{b\}\}$           |

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Question # 4 of 10 ( Start time: 03:19:18 PM, 31 May 2021 )

Let  $A = \{4,5,6\}$  then The relation  $R = \{(4,5), (5,4), (6,5), (5,6)\}$  is \_\_\_\_\_.

Select the correct option

- |                                  |                     |
|----------------------------------|---------------------|
| <input type="radio"/>            | R is Reflexive      |
| <input type="radio"/>            | R is Transitive     |
| <input checked="" type="radio"/> | R is Symmetric      |
| <input type="radio"/>            | R is Anti symmetric |
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Question # 5 of 10 ( Start time: 03:19:31 PM, 31 May 2021 )

Let  $A = \{1,2,3\}$  and  $B = \{0,1,2\}$  and  $C = \{a,b\}$   
 $R = \{(1,0),(1,2),(3,1),(3,2)\}$   
 $S = \{(0,b),(1,a),(2,b)\}$

Composite of R and S = \_\_\_\_\_ .

Select the correct option

- |                                  |                               |
|----------------------------------|-------------------------------|
| <input type="radio"/>            | $\{(1,a),(1,b),(2,a),(3,b)\}$ |
| <input type="radio"/>            | $\{(1,a),(2,a),(3,a)\}$       |
| <input checked="" type="radio"/> | $\{(1,b),(3,a),(3,b)\}$       |
| <input type="radio"/>            | $\{(1,b),(1,a),(3,a),(3,b)\}$ |


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## Question # 6 of 10 ( Start time: 03:19:45 PM, 31 May 2021 )

Let  $R$  be the universal relation on a set  $A$  then which one of the following statement about  $R$  is true?

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input checked="" type="radio"/> | $R$ is reflexive, symmetric and transitive. |
| <input type="radio"/>            | $R$ is not symmetric                        |
| <input type="radio"/>            | $R$ is not transitive                       |
| <input type="radio"/>            | $R$ is not reflexive                        |
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Question # 7 of 10 ( Start time: 03:20:00 PM, 31 May 2021 )

If A contains 3 elements and B contains 2 elements, then number of subsets of  $A \times B$  are .....

Select the correct option

- |                                  |    |
|----------------------------------|----|
| <input type="radio"/>            | 12 |
| <input type="radio"/>            | 6  |
| <input checked="" type="radio"/> | 64 |
| <input type="radio"/>            | 32 |

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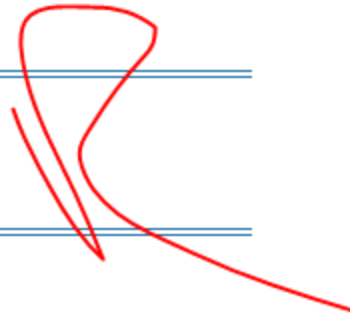
Question # 8 of 10 ( Start time: 03:20:13 PM, 31 May 2021 )

Let  $A = \{1,2,3,4\}$  and define the following relations on A Then  
 $R = \{(1,3), (1,4), (2,3), (2,4), (3,1), (3,4)\}$  is \_\_\_\_\_.

Select the correct option

- |                                  |                                     |
|----------------------------------|-------------------------------------|
| <input type="radio"/>            | R is reflexive                      |
| <input type="radio"/>            | R is both reflexive and irreflexive |
| <input checked="" type="radio"/> | R is irreflexive                    |
| <input type="radio"/>            | None of the above                   |

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Question # 9 of 10 ( Start time: 03:20:25 PM, 31 May 2021 )

The function defined from Z to Z as  $f(x) = \frac{1}{(x+2)(x-2)}$  is not well defined because.....

Select the correct option

Re

- Each input has two outputs.
- Function is not defined at  $x=-2$  and  $x=2$
- Function gives imaginary values for  $x < 0$
- Function is defined at  $x=2$  but not defined at  $x=-2$

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Question # 10 of 10 ( Start time: 03:20:39 PM, 31 May 2021 )

Let  $X = \{2,4,5\}$  and  $Y = \{1,2,4\}$  and  $R$  be a relation from  $X$  to  $Y$  defined by  $R = \{(2,4), (4,1), (a,2)\}$ . For what value of 'a' the relation  $R$  is a function ?

Select the correct option

- |                                  |   |
|----------------------------------|---|
| <input type="radio"/>            | 4 |
| <input checked="" type="radio"/> | 5 |
| <input type="radio"/>            | 1 |
| <input type="radio"/>            | 2 |

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Thank you for watching ☺

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[Rizwanqadeer848@gmail.com](mailto:Rizwanqadeer848@gmail.com)