



The Islamia University of Bahawalpur

Department of Applied Psychology

Mathematics (PSY-01103)

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Semester: BS 1st

Session: 2019-23

Course Contents

- **Session 01**
 - Introduction of Mathematics
- **Session 02**
 - Numbers
 - Natural Numbers
 - Whole Numbers
 - Integers
 - Rational & Irrational Numbers
 - Real Numbers
 - Prime Numbers
 - Composite Numbers
- **Session 03**
 - Properties of Real Numbers
 - Addition Laws
 - Multiplicative Laws
 - Absolute Value
 - LCM
 - GCF/ HCF
- **Session 04**
 - Complex Numbers
 - Conjugate of Complex Number
 - Power of i
 - Operation on Complex Numbers (Addition, Multiplication, Subtraction, Division)

Including Exercise
- **Session 05**
 - Sets
 - Order of a Set
- Proper & Improper Sets
- Equal & Equivalent Sets
- Including Exercise*
- **Session 06**
 - Finite Set
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 - Power Set
 - De Morgan's Law

Including Exercise
- **Session 07**
 - Union & Intersection of two Sets
 - Disjoint Sets
 - Overlapping Sets
 - Complement of a Set
 - Difference of two Sets

Including Exercise
- **Session 08**
 - Matrix
 - Order of Matrix
 - Row & Column Matrix
 - Square Matrix
 - Rectangular Matrix
 - Diagonal Matrix
 - Scalar Matrix
 - Identity Or Unit Matrix
 - Null Matrix

Including Exercise
- **Session 09**
 - Equal Matrices

- Upper Triangular Matrix
- Lower Triangular Matrix
- Triangular Matrix
- Symmetric Matrix
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Including Exercise

➤ **Session 10**

- Singular Matrix
- Non Singular Matrix
- Cramer's Rule
- *Including Exercise*

➤ **Session 11**

- Gauss Elimination Method

Including Exercise

➤ **Session 12**

- Quadratic Equation
- Factorization (Completing Square & by Quadratic Formula)
- Derivation of Quadratic Formula

Including Exercise

➤ **Session 13**

- Factorial
- Permutation
- Combination

Including Exercise

➤ **Session 14**

- Statistics
- Arithmetic Mean (A.M)
- Geometric Mean (G.M)

Including Exercise

➤ **Session 15**

- Harmonic Mean (H.M)
- Median
- Mode
- Prove $A.M > G.M > H.M$

Including Exercise

➤ **Session 16**

- Trigonometry

Including Exercise