# Previous years Question's Summery 2024 (MAT 211)

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Collaboration with,

# Jihadul Islam

This is not any sorts of analysis, or anything special, just sets of all questions altogether :) By Rising Flare community

# **Belal Sir**

### **Definition**

- 1. Statistics
- 2. Moments
- 3. Skewness \*\*
- 4. Kurtosis \*\*
- 5. census \*
- 6. sample survey
- 7. pilot survey \*\*
- 8. Frequency distribution \*
- 9. Event
- 10. Sample
- 11. ogive
- 12. histogram
- 13. variance
- 14. probability
- 15. central tendancy
- 16. primary data
- 17. secondary data
- 18. rank correlation

# **Description**

- 1. Variable vs attribute
- 2. Statistics, it's functions and limitations \*
- 3. Statistics, characteristics, example, importance \*
- 4. Name of graphs used in frequency distribution \*
- 5. Standard deviation property and advantage
- 6. Uses of Coefficient of variation
- 7. properties of correlation coefficient

- 8. Regression vs correlation \*
- 9. Importance of measuring dispersion
- 10. different method of data collection
- 11. different technique of sampling
- 12. "test of significance"? And different uses of "t" test
- 13. usual measures of central tendency \*
- 14. various methods of dispersion
- 15. various methods of absolute measure of dispersion \*
- 16. population vs sample

#### **Proof**

- 1. Relation between different types of mean \*
- 2. correlation coefficient is the geometric mean of 2 regression coefficients \*
- 3. Find the working formula for variance or prove  $\sigma = \frac{1}{n} \{ \sum_{i} x^{2} \frac{(\sum_{i} x)^{2}}{n} \}$
- 4. state and prove Bay's law of probability
- 5. mean and variance of poisson distribution
- 6. standard deviation is independent of change of origin but not of scale
- 7. prove that rank correlation coefficient  $r = 1 \frac{6\sum d^2}{n(n^2 1)}$

# **Pure Math**

- 1. Quartile, decile, percentile \*\*
- 2. mean, medium, mode
- 3. Central moment
- 4. coefficient of skewness \*
- 5. kurtosis and comment on the shape and nature of the distribution \*
- 6. least square regression \*\*
- 7. estimate a value (with 5) \*
- 8. Histogram and locating mode \*\*
- 9. Frequency polygon and curve \*

- 10. Cumulative Frequency Curve or ogive
- 11. standard deviation \*\*
- 12. coefficient of variation \*
- 13. Arithmetic mean (simple)
- 14. the mean of binomial distribution is 40 and standard deviation 6, calculate n, p and q
- 15. Frequency table (easy)
- 16. regression line draw (Y on X)
- 17. probability of card game

# **Masud Sir**

#### **Definition**

- 1. Differential Equation
- 2. Ordinary differential equation \*\*
- 3. Integrating factor \*\*
- 4. Clairaut's Equation
- 5. Linear differential equation \*
- 6. Homogeneous differential equation (with example) \*
- 7. Partial differential equation
- 8. auxiliary equation of a differential equation

# **Description**

- 1. Order and degree of differential equation \*
- 2. Solution of differential equation
- 3. State the necessary condition for a differential equation Mdx + Ndy = 0 to be exact \*\*\*\*
- 4. Some application of differential equation
- 5. form of linear differential equation and Barnoulli's equation

### **Proof**

1. Linear differential equation  $\frac{dy}{dx} + Py = Q$ , where P and Q are the function of x or constant. \*

## **Real Math**

Check questions from Rising Flare!