Slide on MCQ

Graphs in Minitab

Data Visualization / Exploratory Data Analysis

7 Tools of Quality

1. [Cause-and-effect](https://en.wikipedia.org/wiki/Ishikawa_diagram) diagram
2. [Check sheet](https://en.wikipedia.org/wiki/Check_sheet)
3. [Control chart](https://en.wikipedia.org/wiki/Control_chart)
4. [Histogram](https://en.wikipedia.org/wiki/Histogram)
5. [Pareto chart](https://en.wikipedia.org/wiki/Pareto_chart)
6. [Scatter diagram](https://en.wikipedia.org/wiki/Scatter_plot)
7. [Stratification](https://en.wikipedia.org/wiki/Stratified_sampling) ([flow chart](https://en.wikipedia.org/wiki/Flow_chart) or [run chart](https://en.wikipedia.org/wiki/Run_chart))

Dataset: <https://github.com/tanmoyie/Quality-Control/tree/master/Minitab>

The 2nd record of each dataset will be last 2 digits of your roll number.

**Submission (A Poster)**

A landscape poster (20”x30”) depicting

1. 10 major graphs (e.g. Bubble Plot, Box Plot, Pie chart, Six pack, Time Series, ANOVA, Regression) produced from **Minitab**
2. One box of the poster dedicated to Data Modeling, one for raw data
3. What are your Learning Outcomes
4. Summary about the graphs & the datasets in a block

**For every question, you MUST write the reason(s)**

**Question 1: Which of the following tools indicates a relationship between X and Y variables, and provides a visual correlation coefficient.**  
 Cause (X) and Effect (Y) Diagram  
 Pareto Chart  
 Scatter Diagram  
 Control Chart

**Question 2: You are a Project Manager wanting to compare on time delivery (%) of Team Leads across 4 teams, your choice of technique would be?**  
 Hypothesis Testing  
 Histograms  
 Pareto chart  
 Box Plots

**Question 3: The Pareto Graph is used to represent \_\_\_\_\_\_\_\_\_\_\_\_ scale of measurement.**  
 Nominal  
 Ordinal  
 Ratio  
 Interval

**Question 4: In a project, defect density increases and Productivity decreases in subsequent releases. Indicate what kind of relationship that you can interpret in this pair (x, y)?**  
 Weak Positive Correlation  
 Strong Negative Correlation  
 No relation  
 Strong Positive Correlation

**Question 5: Which of the following is not a Measure of Central Tendency**  
 Geometric Mean  
 Median  
 Mode  
 Arithmetic Mean

**Question 6: The Graph which helps to identify and prioritize problems to be solved**  
 Control Chart  
 Histogram Chart  
 Fish Bone Graph  
 Pareto Chart

**Question 7: If the effort variance of your project shows a negatively skewed normal distribution curve, what will you infer from the following?**

This means that the project is proactively finishing ahead of time  
Project is in control  
Project is influenced by lot of special causes  
None of the above

**Question 8: "If P value is >=0.5, then the process is said to be Normal" – Indicate what type of statistics is being used?**  
 Descriptive  
 Inferential  
 Expression  
 None of the above

**Question 9: In your project, Review effort (hrs, X) and defect rate (no. of defects per hour, Y) show a negative correlation. It means :**  
 As Defect rate increases, Review effort also increases  
 Negative correlation does not infer any relationship between Review effort and defect Factors  
 As Defect Rate decreases, Review effort also decreases  
 As Defect Rate increases, Review Effort Hrs decreases

**Question 10: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_determines the nature of relationship which would help us to make predictions.**  
 Correlation Analysis  
 Regression Analysis  
 Stability Analysis  
 Capability Analysis

**Question 11: A software development process has UAT Defect density as Y, percent review effectiveness as X1 and percent design phase effort as X2. Indicate the type of  regression model Y= -0.1320 X1 + 0.16 + 23.200**  
 Single Linear Regression  
 Quadratic Regression  
 Multi Linear Regression  
 Logistic Regression