**Section A**

1. **The relationship among mean, median and mode is given. Which one is correct?**
   - **Answer:** (a) Mean - Median ≈ 1/3 (Mean - Mode)
2. **'Standard Error of the Mean' =**
   - **Answer:** (c) $\sigma/\sqrt{n}$
3. **If the coefficient of skewness is zero, then the shape of distribution is**
   - **Answer:** (d) Symmetrical
4. **Which is not a non-probability sampling?**
   - **Answer:** (d) Cluster Sampling
5. **What does Business Intelligence (BI) focus on?**
   - **Answer:** (c) Both (a) and (b) (Querying and Reporting)

**Section B**

1. **Estimators are the measures used to estimate...**
   - **Population parameters**
2. **Data is ranked or ordered to show relational preference.**
   - **Ordinal Data**
3. **The mean, median and mode are... in normal distribution shape.**
   - **Equal**

**Section C**

1. **Distinguish between analytics, business analytics and business intelligence.**
   - **Analytics:** A broad term that encompasses the examination of data to draw conclusions.
   - **Business Analytics:** The application of statistical and quantitative methods to analyze business data and gain insights to inform decision-making.
   - **Business Intelligence (BI):** Tools and techniques used to collect, store, and analyze data to support business decision-making. BI primarily focuses on reporting and querying data.
2. **Explain business analytics Process.**
   - The business analytics process typically involves the following steps:
     - Business Understanding: Define the business problem and objectives.
     - Data Collection: Gather relevant data from various sources.
     - Data Preparation: Clean, transform, and prepare the data for analysis.
     - Model Building: Develop and evaluate statistical or machine learning models.
     - Deployment: Implement the insights and models into business decisions.
     - Monitoring and Evaluation: Track the performance of the models and make adjustments as needed.
3. **What is a discrete random variable? Describe the important type of discrete probability distribution.**
   - **Discrete Random Variable:** A variable that can only take on a finite or countable number of values.
   - **Important Type: Binomial Distribution**
     - Describes the number of successes in a fixed number of independent trials.
     - Each trial has only two possible outcomes (success or failure).
     - The probability of success remains constant across all trials.
4. **Write short notes on three of the following topics.**
   - **4.1. Systematic Sampling with Example:**
     - A sampling method where every nth element in the population is selected.
     - **Example:** Selecting every 10th customer entering a store.

- **4.2. Cluster Sampling with Example:**
    - The population is divided into clusters, and a random sample of clusters is selected.
    - **Example:** Dividing a city into neighborhoods (clusters) and selecting a random sample of neighborhoods for analysis.
- **4.3. Measure of Central Tendency:**
    - Statistical measures that represent the "typical" or "average" value in a dataset.
    - Common measures include mean, median, and mode.
- **4.4. Measure of Variation:**
    - Statistical measures that describe the spread or variability of data.
    - Common measures include standard deviation, variance, and range.

5. **Explain the concept of estimation and Interval estimation.**
    - **Estimation:** The process of using sample data to infer the value of a population parameter.
    - **Interval Estimation:** Provides a range of values within which the population parameter is likely to fall with a certain level of confidence. This range is called a confidence interval.
6. **Relationship of business analytics and organization decision-making processes, Explain.**
    - Business analytics plays a crucial role in organizational decision-making by providing data-driven insights. By analyzing data, businesses can:
        - Identify trends and patterns
        - Assess risks and opportunities
        - Make informed decisions about product development, marketing, operations, and other strategic areas.
        - Improve efficiency and profitability

If you have any more questions or want to explore specific topics in more detail, feel free to ask!

- https://github.com/khushdubeygithub/statistics

Certainly, let's go through the questions one by one:
**Section A**

1. **Weighted Average Price:**
   - **Answer:** (a) Total cost of materials in stock / Total quantity of materials in stock
2. **Which is not included in the overheads?**
   - **Answer:** (a) Direct Material
3. **What do Shut Down Costs represent?**
   - **Answer:** (a) Fixed costs
4. **Product costs, these are the costs which vary in direct proportion to...**
   - **Answer:** (c) Output
5. **Office cost also called**
   - **Answer:** (b) Cost of sales

**Section B**

1. **Discretionary Fixed Costs is also known as.**
   - **Answer:** Managed Fixed Costs
2. **The techniques and processes of ascertaining cost is known as... costs.**
   - **Answer:** Costing
3. **Expired costs are known as...**
   - **Answer:** Period Costs

**Section C**

1. **Explain Strategic Cost Management. Explain the various Elements of Cost with Examples. Also Describe the components of Total Cost.**
   - **Strategic Cost Management:** It is a management approach that focuses on using cost information to gain a competitive advantage. It involves analyzing costs, identifying cost drivers, and making strategic decisions to improve profitability and efficiency.
   - **Elements of Cost:**
     - **Direct Materials:** Costs of materials that are directly traceable to the finished product (e.g., wood for furniture, fabric for clothes).
     - **Direct Labor:** Costs of labor directly involved in the production process (e.g., wages of assembly line workers).
     - **Manufacturing Overhead:** Indirect costs associated with the manufacturing process (e.g., factory rent, utilities, depreciation of machinery).
     - **Selling and Administrative Expenses:** Costs associated with selling and managing the business (e.g., marketing, advertising, salaries of sales staff).
   - **Components of Total Cost:**
     - **Prime Cost:** Direct Materials + Direct Labor
     - **Conversion Cost:** Direct Labor + Manufacturing Overhead
     - **Total Manufacturing Cost:** Prime Cost + Manufacturing Overhead
     - **Total Cost:** Total Manufacturing Cost + Selling and Administrative Expenses
2. **Explain Fixed costs, Variable Costs, Semi-variable Costs and Step Costs with examples and costs behaviour (approximately draw).**
   - **Fixed Costs:** Costs that remain constant regardless of the level of production (e.g., rent, salaries of permanent staff).
   - **Variable Costs:** Costs that vary directly in proportion to the level of production (e.g., direct materials, direct labor).
   - **Semi-variable Costs:** Costs that have both fixed and variable components (e.g., utilities bills with a fixed charge and variable usage charges).

    - **Step Costs:** Costs that remain constant within a certain range of activity and then increase or decrease in steps (e.g., salaries of supervisors who can handle a certain number of workers).
3. **What is Inventory Valuation? Explain First In First Out (FIFO) method with an example.**
    - **Inventory Valuation:** The process of assigning a monetary value to the inventory held by a company.
    - **FIFO (First In First Out):** Assumes that the oldest inventory items are sold first. This method is particularly useful during periods of inflation as it results in higher reported profits and lower cost of goods sold.
      **Example:**
    - Beginning Inventory: 100 units at $10 per unit = $1,000
    - Purchases: 200 units at $12 per unit = $2,400
    - Ending Inventory: 150 units
    - Under FIFO, the cost of goods sold would be calculated as follows:
        - Cost of goods sold = (100 units * $10) + (50 units * $12) = $1,600
4. **Write short notes on three of the following topics:**
    - **Differential Costs:** Costs that differ between two or more alternatives. They are relevant for decision-making.
    - **Opportunity Costs:** The cost of the next best alternative forgone when a decision is made.
    - **Out-of-Pocket Costs:** Costs that involve an actual cash outlay.
5. **What is Absorption Costing? Explain the technique with an illustration.**
    - **Absorption Costing:** A costing method that allocates all manufacturing costs, including both fixed and variable overhead, to products. This means that fixed manufacturing overhead is treated as a product cost and is included in the cost of inventory.
    - **Illustration:**
        - If a company produces 1,000 units and incurs $10,000 in fixed manufacturing overhead, the fixed manufacturing overhead cost per unit would be $10 ($10,000 / 1,000 units). This cost would be added to the other product costs to determine the total cost per unit.

Let me know if you would like any further explanation or have more questions!

- https://www.studocu.com/ph/document/cotabato-state-university/business-administration-2/ca-reviewer-1-cost-accounting/43649817