Sample Questions

Basic Statistics

1. Given are the wages paid to workers in a small factory. The class-interval is of 10 cents.

Wages in $		
1.03	1.27	1.85
1.10	1.82	1.29
1.36	1.98	1.73
1.10	1.70	1.50
1.15	1.65	1.45

The class limits for the given data would be taken as _____.

   a. 1.01 - 1.10
      1.10 - 1.20
      1.20 - 1.30
      1.90 - 2.00

   b. 1.01 - 1.10
      1.11 - 1.20
      1.21 - 1.30
      1.91 - 2.00

   c. 1.01 - 1.09
      1.10 - 1.19
      1.20 - 1.29
      1.90 - 1.99

   d. 0.01 - 0.10
      0.11 - 0.20
      0.21 - 0.30
      1.91 - 2.00

2. Tom is trying to open Bob's computer at office since Bob is on leave. The password consists of digits only and the digits could be from 0-9. He remembers that the password is of 3 digits and no digits repeat. Assume that he gets the correct code only after making all possible attempts. In which attempt does he get the right code?

   a. 1,000
   b. 648
   c. 720
   d. 810

3. Formulate the appropriate null hypothesis and alternate hypothesis.

The head of the sales department informs the accounts department that the average tour and travel expenses of his team members does not exceed $. 6,000 per month. However, the senior accountant has recently observed that the tour and travel expenses have been increasing and so he decides to test the sales head's claims by considering a sample of his team members' expenses over the last three months.

a. H_0: Expenses = 6,000
   H_A: Expenses ≠ 6,000

b. H_A: Expenses ≥ 6,000
   H_0: Expenses ≤ 6,000

c. H_A: Expenses ≤ 6,000
   H_0: Expenses > 6,000

d. H_A: Expenses > 6,000
   H_0: Expenses ≤ 6,000

e. H_A: Expenses < 6,000
   H_0: Expenses ≥ 6,000

4. In pilot testing of a new product, distribution A corresponds to the product ratings given by the company personnel while distribution B corresponds to the product ratings by a stratified sample of consumers. Which of the following is correct?
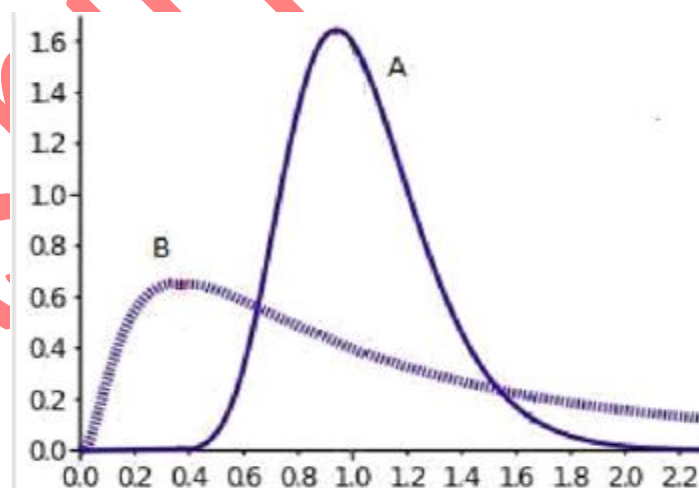
a. A and B can have the same mode but never the same mean or median
b. A and B can have the same median and mode but never the same mean
c. A and B can have the same mean and median but can never have the same mode
d. A and B cannot be compared in terms of mean, median and mode

5. Under which of the following cases, confidence interval for the population mean cannot be constructed?

    a. A skewed population with a large sample and an unknown population variance
    b. A normal population with a large sample and a known population variance
    c. A skewed population with a small sample and an unknown population variance
    d. A normal population with a small sample and an unknown population variance

6. Which of the following conclusions is correct with respect to the data?

The placement committee of a B-school decide to investigate if there is any relationship between the final GPA of a student and the salary package (in thousands) that the student is offered during the campus placements. The regression run on a data of final year students who passed out in the year 2012 is shown

Predictor	Coef	SE Coef	T
Constant	20.000	xyz	6.21
X	7.210	1.3626	5.29
Analysis Of Variance			
SOURCE	DF	SS	
Regression	1	41587.3	
Residual Error	70	27959.4	
Total	71	69546.7	

    a. A unit increase in the student's GPA results in $20,000 increase in the salary
    b. A unit increase in the student's GPA results in $. 7,000 increase in the salary
    c. A unit increase in the student's GPA results in $. 3,221 increase in the salary
    d. A unit increase in the student's GPA results in $1,362 increase in the salary

7. If Dylan wants mean profit generated to be greater than the median profit generated, then
_____.

Dylan, a shopkeeper's son after reading some elementary statistics decides to conduct an analysis on profits generated by each commodity in his father's shop. He distributes each commodity with respect to the percentage profit earned by selling them as shown in the figure

Profit percentage earned by selling commodity

    a. Dylan should include 3 more products each in 2% and 3% profit generating commodity.

    b. Dylan should include 3 more products each in 5% and 6% profit generating commodity.

    c. Dylan should include 3 more products each in 3%, 4% and 5% profit generating commodity.

    d. Mean profit is already greater than median profit.

8. Which of the following statement is true?
  A) Probability density function is always positive
  B) The range of variable for PDF can be finite as well as infinite.
  C) For an infinite range variable, probability cannot be calculated.
  D) PDF and CDF are the same thing but with different limits.

    a. A, C
    b. B, C, D
    c. A, B, C
    d. A, C, D

9. An examination consists of 25 multiple choice questions each with five alternatives only one of which is correct. It is decided to subtract one mark for each incorrect answer and to award four marks for each correct answer. Find the mean mark for a candidate whose chance of correctly answering each question is 0.8?

    a. 20
    b. 40
    c. 65
    d. 75

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