

1-Deductive statistics is .....

- |                                      |                                          |
|--------------------------------------|------------------------------------------|
| 1. the concept of logical induction  | 2. the analysis of sampling process      |
| 3. the definition of random sampling | 4. the application of probability theory |

2-A and B are 2 mutually exclusive events and C and B are 2 independent events. The probability of  $A \cap B \cap C$  equals to

- |      |        |      |         |
|------|--------|------|---------|
| 1. 0 | 2. 0.5 | 3. 1 | 4. 0.75 |
|------|--------|------|---------|

3-To describe nominal data, we use .....

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|------------------------|----------------|
| 1. graphs and measures | 2. histogram   |
| 3. counts and percents | 4. a stem plot |

4- A median is a ..... parameter.

- |                  |             |          |               |
|------------------|-------------|----------|---------------|
| 1. extreme value | 2. location | 3. scale | 4. dispersion |
|------------------|-------------|----------|---------------|

5-The mean is inappropriate for ..... data.

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|------------|-------------|----------|-----------|
| 1. nominal | 2. interval | 3. ratio | 4. no one |
|------------|-------------|----------|-----------|

6-A disadvantage of using the mean is that it

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|-----------------------------------|-----------------------------|
| 1. is sensitive to deviations     | 2. balances the deviations  |
| 3. is sensitive to extreme values | 4. ignores some of the data |

7-when the distribution is severely skewed, it is not better to use a .....

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|-------------|---------|-----------|---------|
| 1. midpoint | 2. mode | 3. median | 4. mean |
|-------------|---------|-----------|---------|

8-Logic inferntial statistics mainly deals with .....

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|---------------|------------------|----------------|---------------|
| 1. treatments | 2. probabilities | 3. populations | 4. assumption |
|---------------|------------------|----------------|---------------|

9-A random variable is .....

1. a nonsense story told by statisticians
2. a map from discrete probabilistic experiment to noninformative codes
3. a map from probability function to an experiment
4. a function from space of possible outcomes to real numbers

10-A discrete random variable gives positive mass to a .....values.

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|-------------|--------------|-----------|----------------|
| 1. discrete | 2. countable | 3. finite | 4. uncountable |
|-------------|--------------|-----------|----------------|

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11- Most commonly random experiments involve elementary events which are .....

1. valued tossing
2. equally probable
3. actually possible
4. balanced dropping

12- Let X be the number of throws of a coin until a head appears. The distribution of X is

1. normal
2. geometric
3. binomial
4. negative binomial

13- A process involving a series of trials with two complementary outcomes is called the ..... process.

1. Gaussian normal
2. Banach
3. Bernouli
4. Poisson

14- Skewed means.....

1. having a symetric shape.
2. a shape split into two mirror shape.
3. having a shape which is not normal.
4. having no symmetric shape.

15- Let X be a random variable with distribution  $\text{bin}(n, p)$ , then

1. the variance is of X is  $n(1-p)$
2. the variance of X is  $np$
3. the expected value of X is  $np$
4. the mean of X is p

16- An exponential distribution has ..... parameter.

1. null
2. one
3. none
4. no

17- The negative binomial distribution is similar to the .....

1. geometric distribution
2. normal distribution
3. positive binomial distribution
4. negative exponential distribution

18- A bivariate distribution is a distribution with two .....

1. parameters
2. medians
3. modes
4. variables

19- The most commonly used measure of relative variability is .....

1. standard deviation
2. variance
3. coefficient of variation
4. range

20- The ..... shows the direction and strength of the relationship between two variables.

1. calculation
2. observation
3. correlation
4. association

21-The best and most effective methods to show the relationship between two numerical variable are .....

- |                     |                        |
|---------------------|------------------------|
| 1. regression model | 2. pearson correlation |
| 3. scatter plot     | 4. 2 and 3             |

22-On a scatter plot, each individual in the data is illustrated as a .....

- |         |         |            |          |
|---------|---------|------------|----------|
| 1. plan | 2. plot | 3. pattern | 4. point |
|---------|---------|------------|----------|

23-The relationship between two variables is strong, when .....

- |                                       |                                              |
|---------------------------------------|----------------------------------------------|
| 1. the simple pattern is quite common | 2. the points are near the straight-line     |
| 3. the points are widely scattered    | 4. the direction and strength are difference |

24-If tests are used to analyze experiments in which the dependent variable is ranks, they are called.

- |               |                  |            |            |
|---------------|------------------|------------|------------|
| 1. parametric | 2. nonparametric | 3. nominal | 4. ordinal |
|---------------|------------------|------------|------------|

25-In a statistical test of hypothesis the value of the test statistics that separates the rejection and acceptance regions is called the .....

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|----------------------|---------------------|
| 1. acceptance region | 2. acceptance value |
| 3. critical region   | 4. critical value   |

26-The smallest value of  $\alpha$  for which test results become statistically significant is called the .....

- |                 |                      |
|-----------------|----------------------|
| 1. type I error | 2. type II error     |
| 3. p-value      | 4. power of the test |

27-This statistical formal terms,  $H_0 : \mu_1 - \mu_2 = 0$ , is referred to as .....

- |                          |                           |
|--------------------------|---------------------------|
| 1. unexpected conclusion | 2. expected conclusion    |
| 3. null hypothesis       | 4. alternative hypothesis |

28-If the differences between two groups are very probable by chance, it can be concluded that the differences are .....

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|-------------|---------------|---------------|----------------|
| 1. expected | 2. unexpected | 3. subtracted | 4. distributed |
|-------------|---------------|---------------|----------------|

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29- The purpose of multiple regression is to help researchers explain ..... variable.

1. the effect of the regressors on a dependent
2. the variance of the dependent
3. the effect of the dependent variables on regressors
4. the variance of independent

30- Adding the frequency of each class to the sum of frequencies is called .....

1. frequency distribution
2. cumulative frequency
3. contiguous blocks
4. interval width