

بسم الله الرحمن الرحيم  
اللهم صل على محمد و آل محمد



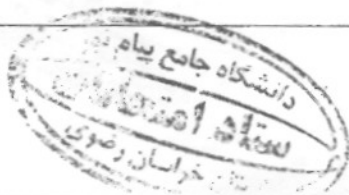
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1. علم آمار
  - a. statistic
  - b. statistics
  - c. satiation
  - d. stat
2. قیاس
  - a. inferential
  - b. conclusion
  - c. induction
  - d. deductive
3. چولگی
  - a. baise
  - b. skewed
  - c. symmetry
  - d. bell
4. مستطیل
  - a. square
  - b. rectangular
  - c. triangular
  - d. circle
5. قطعه زمین
  - a. lay
  - b. land
  - c. lot
  - d. zone
6. دانشجوی سال اول
  - a. freshman
  - b. sophomore
  - c. first student
  - d. first man
7. انحراف
  - a. deviation
  - b. variation
  - c. variance
  - d. dispersion
8. نسبت به
  - a. due to
  - b. with respect to
  - c. with
  - d. related
9. سکه سالم
  - a. bais toss
  - b. fair toss
  - c. bais coin
  - d. fair coin
10. الگو
  - a. sample
  - b. prototype
  - c. patem
  - d. copy
11. ثابت
  - a. fix
  - b. scalar
  - c. constant
  - d. silent
12. متوالی
  - a. serial
  - b. successive
  - c. step by step
  - d. continuos



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13. نزدیک به
- a. approximate      b. near      c. close to      d. tend
14. مراحل اجراء
- a. run steps      b. manage      c. steps      d. procedure
15. بحرانی
- a. critical      b. dangerous      c. risky      d. causing anxiety
16. A statistical method for determining the statistical significance of differences among a set of two or more means.
- a. F test      b. A nova      c. Z score      d. a and b
17. A line that continually approaches but never reaches a specified level.
- a. Regression line      b. Asymptotic      c. central limit      d. significan
18. A join distribution of two variables, the individual scores of which are paired in some logical way.
- a. Binomial distribution      b. Bivariate distribution  
 39 c. Bimodal distribution      d. Bernoli distribution
19. The mean, median, or mode; a statistic that describes the typical score in a distribution.
- a. expected value      b. deviation score      c. central value      d. descriptive statistic
20. Reasoning from the general to the specific.
- a. deductive      b. induction      c. inferential      d. sample
21. A statement about the relationship between two or more variables.
- a. correlation      b. hypothesis      c. association      d. spearman's rs
22. A scale of measurement in which numbers are used simply as names and not as quantities.
- a. dominal scale      b ordinal scale      c. ratio scale      d. interval scale
23. Estimating one particular number to be the parameter of a population.
- a. statistic      b. point estimation      c. sufficient statistic      d. least square solution
24. A distribution in which all scores have the same frequency.
- a. rectangular distribution      b. uniform distribution  
 c. square distribution      d. a and b





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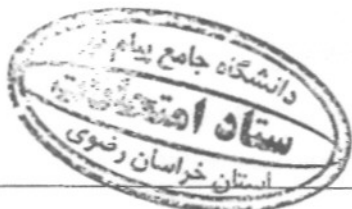
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34. Logic inferential statistics mainly with .....
- a. treatments      b. probabilities      c. populations      d. assumptions
35. It is a nonparametric method used to determine whether the two independent samples of ranked data came from the same population.
- a. Mann-Whitney U      b. Wilcoxon  
c. Wilcoxon-Wilcoxon      d. rs
36. The last category has a ..... Which equals to the sample size.
- a. frequency      b. cumulative frequency  
c. lower bound      d. upper bound
37. The first step for finding percentiles from ungrouped data is .....
- a. sort the raw data      b. establish the decimal equivalent  
c. write the formula      d. compute the percentile value
38. In this formula,  $v = \frac{s}{\bar{x}}$ ,  $v$  is .....
- a. variation      b. coefficient of variation  
c. variation of coefficient      d. skewness
39. If a sample space contains finite or infinite number of sample points, such a space is referred to as ..... sample space.
- a. countable      b. probability      c. metric      d. norm
40. Many random experiments are non repeatable because.....
- a. the long-run frequency is a meaningful concept.  
b. the event found can be repeated many times.  
c. they are whether feasible or not feasible.  
d. they can always be acceptable or can be repeated.



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## Part 1:

Below the sentence are four choices, marked a, b, c, d, you should find the one choice which completes the sentence.

- Adding the frequency of each class to the sum of frequencies is called .....
  - frequency distribution
  - cumulative frequency
  - contiguous blocks
  - interval widths
- A median is not appropriate for ..... data.
  - ordinal
  - interval
  - ratio
  - nominal
- A skew distribution is .....
  - a u-shaped distribution
  - a flat distribution
  - a highly peaked distribution
  - an asymmetric distribution
- The median is the ..... score in the distribution when the scores are put in order.
  - least frequent
  - most frequent
  - middle
  - average
- When the frequency of a score is divided by the total number of scores, the result, is called.....
  - cumulative frequency
  - relative frequency
  - median
  - mean
- A disadvantage of mean is that it .....
  - is sensitive to extreme score
  - is less than the mode
  - is more than the median
  - ignores some of the data
- A list of all the possible outcomes of an experiment is .....
  - sample space
  - event
  - random
  - variable
- The ..... scale has a true zero point, which indicates a complete absence of the thing measured.
  - nominal
  - interval
  - ordinal
  - ratio
- This statistical formal terms,  $H_1 = \mu_1 - \mu_2 = 0$ , is referred to as .....
  - alternative hypothesis
  - null hypothesis
  - expected conclusion
  - unexpected conclusion



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10. The .....of a statistical test is defined as  $1 - \beta$ .
- a. rank                      b. moment                      c. level                      d. power
11. In a histogram, with 6 classes, of length 2, the lower boundry of the first class in 4, then the upper boundry of the fifth class is:
- a. 10                      b. 15                      c. 14                      d. 16
12. The Mann-whitney test is based on:
- a. the z scores                      b. the sum of ranks  
c. the means of distributions                      d. the ranks obtained from the population
13. Measure of variability for a set of scores are indexes which provide information about .....scores.
- a. the points of location of                      b. the distance among  
c. the correlation of                      d. the dispersion of
14. If the covariance of two variables is zero, then:
- a. they are independent  
b. they are correlated  
c. they are independent if their joint distribution is normal  
d. the conditional distribution of one given the other is normal
15. There exists .....permutations of the letters in the word LIFE.
- a. 8                      b. 2                      c. 24                      d. 63
16. Assume {2,4,9,5} is a random sample from a population with a finite range, our estimate for the population range is:
- a. 9                      b. 7                      c. 4                      d. 3
17. A two-sample test usually is a test .....
- a. to compare two populations  
b. to compare two samples  
c. with two nonequal samples  
d. based on two samples from the same population



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18. Let  $x$  be the number of throws of a coin until a head appears. The distribution of  $x$  is:

- a. negative binomial    b. binomial    c. geometric    d. Bernoulli

Paer2:

*In this section, please read the passage, on Fiducial Interval, and answer the following questions:*

Among the three types of statistical inferences Bayesian inference, frequentist inference, and **fiducial** inference-most statisticians are least familiar with fiducial inference.

In a recent article, Schwertman (1996) used the construction of confidence intervals for the Bernoulli success probability via the quadratic procedure to give a simple **explanation** of the concept-of a fiducial interval. The fiducial **philosophy** of inference is an alternative to, and **compensates** for, the **deficiencies** of the other two procedures of inference. It is unfortunate that its importance has been **unduly overlooked**.

The purpose of this article is **twofold**. Section 2 provides a general explanation of the Dducial confidence interval and its construction for a class of parameters in which the distributions are stochastically increasing or decreasing. Section 3 **explores** a procedure for using the fiducial inference in evaluating the confidence coefficients of pre-data intervals in the presence of nuisance parameters and the probabilities of inclusion of parameters in general post. data intervals.

Historically, the very first article on the fiducial philisophy, Fisher (1930), was also about the construction of fiducial intervals. I shall demonstrate my points through the construction of fiducial intervals for the parameter  $\theta$  for three distributions: the normal  $(\theta, 1)$  distribution; the binomial distribution with success probability  $\theta$ ; and the uninform  $(0, \theta)$  distribution. In the first case  $\theta$  is a location parameter while in the third case it is a scale parameter. The binomial distribution is included here because it is a simple, popular example.

19. What is the passage about?

- a. Probability    b. Mathematics    c. Inference    d. History

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20. Statisticians are least familiar with .....
- a. Fiducial Inference                      b. Frequentist Inference  
c. Bayesian Inference                      d. Fuzzy Inference
21. Who gave the simple concept of fiducial interval recently?
- a. Fisher                      b. Schwertman                      c. The writer of this passage                      d. Pearson
22. What is an alternative philosophy of the deficiencies of inference?
- a. The mathematics philosophy                      b. The fiducial philosophy  
c. The probability-philosophy                      d. The frequency philosophy .
23. The fiducial philosophy has been unduly:
- a. Studied                      b. Exaggerated                      c. Forbidden                      d. Ignored
24. The general distributions, which are used, in this article are:
- a. Monotone                      b. Normal                      c. Independent                      d. Arbitrary
25. The confidence coefficient is evaluated in the presence of:
- a. The mean parameter                      b. The variance parameter  
c. The correlation parameter                      d. The nuisance parameter
26. The purpose of the article is explained in:
- a. Several parts                      b. Introduction                      c. Two parts                      d. The middle of the article
27. The first article was also about the construction of:
- a. Fiducial interval                      b. Bayesian interval                      c. Frequentist interval                      d. A test statistic
28. The points of the writer in this passage are demonstrated by:
- a. Poisson parameter  $\theta$                       b. Normal parameter  $\delta^2$   
c. Three known distributions                      d. Correlation parameter  $\rho$
29. What is a simple and popular distribution in this article?
- a. Normal                      b. Uniform                      c. Gamma                      d. Binomial
30. The study of a location parameter is:
- a. Forgotten.                      b. Demonstrated                      c. Continued                      d. Left for future