MCQs STA100

FINAL TERM -EXAM (topic 23 to 46)

STA-100 General Mathematics and Biostatistics

Note: All past MCQs are included.

1-In the equation of the line $y=8x+\frac{3}{4}$ the y-intercept is -- $\frac{3}{4}$

2-The amplitude of a function is the height from the----of the function its maximum or minimum value—Mean

3-IQs of all children in a school is an example of ----Finite Population

4-During a census what type of data was collected—Primary Data

5-The graph of a cumulative frequency distribution is called-- Ogive

6-Data Arranged in Ascending and Descending order is called--Arrayed Data

7-If an observation in the data set is negative the geometric mean is undetermined

8-The location and shape of the normal curve is determined by ……Mean

9-…..is used when we are dealing with proportions to find the probabilities……Normal distribution

10-The central limit theorem states that the mean of the sampling distribution of the means is equal to the population……..Mean

11-If the second moment ratio is greater than 3 the distribution will be ……Leptokurtic

12-In the method of moments, how many equations are required for finding two unknown population parameters…..2

13-The number of parameters in normal distribution is …..2
14-In general, the estimators obtained by the method of moments are …..Inefficient

15-If Var (mean1) < Var (mean2) it implies ……..Mean 1 is more efficient

16-Normal approximation to the binomial distribution is used when ……..Both ($np \geq 5$, $nq \geq 5$)

17-Sampling distribution are ……The probability distribution of sample statistic

18-Total no of possible samples of size 2 (without replacement) from the population of size 6, will …..15

19-If U1=225 and U2=186, the difference of population means will be ……39

20-Satistical inference can be divided into two main branches ……Estimation and Hypothesis testing

21-Using the normal approximation to the binomial distribution with n=3 and p=0.0571 the value of mean is …….0.1713

22-The probability distribution of the proportion of successes in all possible samples is called the …….Sampling distribution of sample proportion

23-The total area under the normal curve is ……1

24-The standard normal distribution has it mean and variance equal to ……..0 and 1 respectively

25-Total no of possible samples of size 3 (with replacement) from the population of size 6, will be …….216

26-If our sampled population is normal, then sampling distribution of the sample mean….. Depend on sample size

27-As rule of thumb, when n>=30, then we can assume that …..is normally distributed…..Binomial distribution

28-Which of the following is most important and most widely used method in point estimation?.....The method of maximum likelihood

29-If an estimator is more efficient than the other estimator, its shape of the sampling distribution will be …….Highly peaked

30-P (A), is defined as ratio: _____m/n

31- When the union of mutually exclusive events is equal to the entire sample space S is defined as ---exhaustive event

32-If A = {H, T} then which of the following is power set 0f A?
{∅}, {H}, {T}, {H, T}

33- the standard deviation of -1,-1,-1,-1 will be 0

34. If median>mid-quartile range > midrange then distribution will be --- Negatively skewed

35- P(event) = NO of a outcomes / total no of outcomes is a definition of _____ subjective approach

36 In positively skewed curve _ median < mid- quartile < mid-range

37. Difference between the largest and the smallest data values is called – range

38- The measure of dispersion which uses only two observations is called --- rang

39. If a player well shuffles the pack of 52 playing cards, then the probability of a black card from 52 playing cards is __½

40-In a box and whisker plot, if the median line is closer to the left of the box then distribution will be -- positively skewed

41-In case of a positive linear relationship r lies between -- 0 and 1

42- {AUA =A} _____idempotent law.

43. The probability of a sure event is___1

44- co-efficient of quartile deviation is an relative measure dispersion
45-Consider a set of A={1,2,3} what is the number of subsets of A _8

46. Formula for coefficient of variation is __ C.V = S/X+100
47. In scatter diagram the variable plotted along y- axis is dependent variable.
48. When a researcher want to compare intensity of symptoms when different doses are administered in this case, different doses will be treated as --- Independent variable

49- For a symmetrical distribution the the Pearson coefficient skewness will always be_____ zero.

50. Pesrson coefficient cannot be used when standard deviation is- 0

51. The measurement of spread or scatter of the individual values around the central point is called __ measure of dispersion.

52. The positive square root of the mean of squares of the derivations of observation from their mean is--standard deviation.

53. If Y = 3x+5, then S.D of Y is equal to _____ 3s.d (x).

54. If in a linear regression model it is assumed that the intercept parameters are equal to 0-The regression line will pass through the origin.
55. If a total sum of squares is 20 and the sample variance is 5 then total number of observation are__4

56. Which of the following is not a measure of central tendency standard deviation.

57. Find the number of subsets of the following set {x|x is a days of the week} – 128

58-10! = 3628800

59-The player well shuffles the pack of 52 playing cards, and then the probability of a black card from 52 playing cards is: 13/52

60-The probability of drawing a 'jack card 'from 52 playing cards is: 4/52

61-Which dispersion is used to compare variation of two series. C.Variation

62- -All the values fall on the same straight line and the line has a positive slope then what will be the value of the correlation coefficient 'r': r = +1

63-- Regression line Y= a + bX, the value of the correlation coefficient will be zero if: Intercept a = 0

64-- When two coins are tossed the probability of at least one head is: ¾

65--. Which one of the following measurement does *not* divide a set of observations into equal parts? Standard deviations

66-The model Y = mX + a, Y is also known as the: Predicted variable

67-.According to empirical rule approximately 95% of the measurements will fall under which interval? $X \pm 2\delta$

68-Which one of the following is written at the top of the table? Title

69-.The curve has a longer tail to the right, it is called: Positively skewed
70--.Which one of the following is the class frequency? The number of observations in each class

71-If X f(x) is a discrete random variable, then the function: A distribution function

72-Which one of the following graphs is used for a time series data? Historigram

73-If you connect the mid-points of rectangles in a histogram by a series of lines that also touches the x-axis from both ends, what will you gets?
Frequency curve

74-In Normal Distribution if the mean of the two observations is 10.5, then median of these two observations will be: 10.5

75-.Which one is the formula of mid-range: x0+xm/2

76-Which one of the following is not included in measures of central tendency: Quartile deviation

77-For the given data 2, 3, 7, 0, -8 G. M will be: Undetermined
78.For a particular data the value of Pearson's coefficient of skewness is greater than zero. What will be the shape of distribution? Positively skewed

79. In measures of relative dispersion unit of measurement is-Vanish

80. The F-distribution always ranges from: 0 to +∞

81-In chi-square test of independence the degrees of freedom is n – p

82. The Chi- Square distribution is continuous distribution ranging from:
$0 \leq \chi 2 \leq \infty$

83-If X and Y are random variables, then *E (X Y)* is equal to—
E (X) E(Y)

84-If ŷ is the predicted value for a given x-value and b is the y-intercept then the equation of a regression line for an independent variable x and a dependent variable y is: ŷ = mx + b, where m = slope

85-The location of the critical region depends upon: Alternative hypothesis

86-.The t-Distribution is---Spread out then the standard normal Distribution.
More

87. To find the confidence internal for the ratio of two variances we use: F-Distribution

88-How many percent of values are less then 4th deciles in a symmetric distribution? 40

89. The combined distribution of more than two random variables is: Joint Distribution

90.The degrees of freedom for a T-test with sample size 14 are: 13

91. Which of the falling is true for binomial distribution b(x: n, p): Mean >Variance

92-What is f*m in* the formula of mode? Highest frequency

93. The parameters of the binomial distribution b(x; n, p) are: n & p

94. Which of the following is true for the Poisson distribution?
Mean =variance

95-If a significance level of 1% is used rather than 5%, the null hypothesis is: Less likely to be rejected

96. The variance of the chi-square distribution is: 2*v*

97. The degrees of freedom for a t-test with sample size 10 is: 9

98. The value of χ2can never be: Negative

99. The total number of samples when sampling is done with replacement:
N^n
100.ANOVA was introduced by: R.A Fisher

101-The test statistic used in analysis of variance procedure follow the...distribution. F

102. For testing of hypothesis about population proportion we use: Z-test
103.A die is rolled. What is the probability that the number rolled is greater than 2 and even: 1/3

104. The probability of drawing a king of spade from a pack of 52 cards is: 1/52

105. An estimator T is said to be unbiased estimator of θ if E (T) = θ

106.From point estimation, we always get: Single value

107.The best unbiased estimator for population variance: Sample variance

108. When c is a constant, then E(c) is: c

109. Var (4X + 5) = 16 Var (X)

110. When f(x) is continuous probability function, then P(X = 1) is: 0

111. The hyper geometric random variable is a (an): Discrete variable

112. From a sample of 200 people were asked whether they like a particular product. Fifty said 'yes' and remain said 'no', assuming 'yes' means a success, which of the following is correct? Sample proportion p=0.25

113. In any data set, what percent of values fall in the interval Median in *Q.D?* 50 per cent

114.The height of a student is 60 inches. This is an example of? Continuous data

115. In Statistics, we have MSE which is abbreviation of? Mean square error

116. The deviation of a distribution from symmetry is called: Skewness

117. If E is an impossible event, then P (E) is: 0

117 .If a data set has the even number of observations, the median: Is the average value of the two middle items when all items are arranged in ascending order

118. In testing of hypothesis, we always begin it with assuming that: Null hypothesis is true

119. If a continuous probability distribution has B_2 = 2.14 then what will be Nature of the distribution? Platykurtic

120. When each outcome of a sample space has equal chance to occur as any other, the outcomes are called: Equally likely

121. The LSD test is applied only if the null hypothesis is: Rejected

122. Analysis of variance is a procedure that enables us to test the equality of several: Means

123. If a random variable X denotes the number of heads when three distinct coins are tossed, the X assumed the values: 0,1,2,3

124. If P (E) is the probability that an event will occur, which of the following must be false: P (E) = 1

125. The analysis of variance technique is a method for: Comparing three or more means

126-The continuity correction factor is used when: A continuous distribution is used to approximate a discrete distribution

127. Stem and leaf is more informative when data is : Less than 100

128. The branch of Statistics that is concerned with the procedures and methodology for obtaining valid conclusions is called Inferential Statistics
129.Which of the following is a systematic arrangement of data into rows and columns: Tabulation

130. In normal distribution Q.D = 0.6745

131.In normal distribution $B_2 = 3$

132. Which one of the following statements is true regarding a population? It must be a large number of values

133-In a simple linear regression model, if it is assumed that the intercept parameter is equal to zero, then: The line pass through the origin

134. A failing student is passed by an examiner is an example of: Type II error

135.Which dispersion is calculated from all the observations? Standard deviation

136. Standard deviation of the data 7, 7, 7, 7, 7, 7, 7 is: 0

137. Which one is the poor measure of dispersion in open-end distribution? Range

138. Men tend to marry women who are slightly younger than themselves. Suppose that every man married a woman who was exactly 5 years younger than themselves. Which of the following is correct: The correlation is 1

139. Sum of absolute deviations of the values is least when deviations are taken from: Median

140. Which of the following measures of central location is affected most by extreme values: Mean

141.Which of the following is a critical value of Z when is 95% for one tailed test: 1.96

142-The difference between expected value of statistic and parameter is called: Bias

143-The following data shows the number of hours worked by 200 statistics students. Number of Hours Frequency

0 - 9	**40**
10 - 19	**50**
20 - 29	**70**
30 - 39	**40**

What is its class interval? 10

144. The F-distribution has …… parameter. Two

145.Mean deviation is always: Less or equal to S.D

146. Which formula represents the probability of the complement of event A:

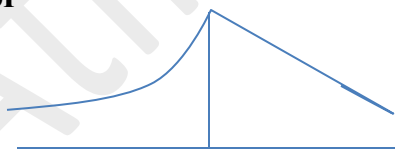
1- *P* (*A*)

147.Ideally the width of confidence interval should be: 0.5 to 0.999

150. The probability distribution of a statistic is called the: Sampling distribution

151. Two sets A and B are equal if A ⊆ B and B ⊆ A If two sets A and B are equal we write A = B to designate that relationship.

152. For a particular data the value of Pearson's coefficient of skewness is greater than zero.



153. What will be the shape of Curve? Positively skewed.

154. .For testing of hypothesis about population proportion, we use: Z-test

155. The classical definition of probability assumes: mutually exclusive and equally likely

156. LSD stands for Least Significant Difference

157-The probability of drawing any one spade card is 13/52

158-If the second moment ratio is less than 3 the distribution will be Platykurtic

159- The moment ratios of normal distribution come out to b 0 & 3

160- The location and shape of the normal curve is (are) determined by Mean & standard deviation

161- Evaluate (10-4)! 720

162- Set which is the sub-set of every set is Empty Set

163- The standard deviation of -1, -1, -1, -1 will be 0

164- Which of the following can never be probability of an event ? -0.5

165- In scatter diagram, the variable plotted along Y-axis is: Dependent variable

166- The probability of drawing a red queen card from well-shuffled pack of 52 playing cards is 2/52
167- Probability of a sure event is 1

168- For exhaustive events, the P(AUBUC) is equal to ..P(S)
169- Two events A & B are said to be independent if....P (A) * P (B)
170- The total area under the normal curve is 1

171- The function abbreviated to d.f. is also called the.....Probability distribution function

172- Probability of an impossible event is always: Zero

173- The sample mean is an unbiased estimator for the population mean. This means: The average sample mean, over all possible samples, equals the population mean

174- If one event is unaffected by the outcome of another event the two events are said to be: Independent

175- A set that contains all possible outcomes of a system is known as Universal Set
176- In an ANOVA test there are 5 observations in each of three treatments. The degrees of freedom in the numerator and denominator respectively are 2, 12
177- In normal distribution M.D. = 0.7979σ
178- A discrete probability function f(x) is always :1
179- Which graph is made by plotting the mid-point and frequencies? Frequency polygon
180- The F- test statistic in one-way ANOVA is MST/MSE
182- When a fair die is rolled; the sample space consists of- 6 outcomes
183- The curve of the F- distribution depends upon: Degrees of freedom
184- The data for an Ogive is found in which distribution? A cumulative frequency distribution
185-In chi-square test of independence the degrees of freedom – n-p
186-The combined distribution of more than two random variables is-Joint Distribution

187-The mean of the F-distribution is: $\frac{v_2}{v_2 - 2}$

188- $\sum_{i=1}^{n}(X_i - 20)^2 = 0$ Where $\bar{X} = --$ **20**

189-When $Q_1 = 2, Q_3 = 4$ **what is the value of Median, if the distribution is symmetrical---3**

190- Which of the following is impossible in sampling—Heterogeneous

191-Which one of the following statements is true regarding a sample? It is a part of population

192-The area under a normal curve between 0 and -1.75 is--0.4599

193-A population that can be defined as the aggregate of all the conceivable ways in which a specified event can happen is known as--Hypothetical population'

194-Which of the following pairs of events are mutually exclusive? A: the numbers above 100; B: the numbers less than 200

195-The collection of all outcomes for an experiment is called: A sample space

196-If one event is unaffected by the outcome of another event the two events are said to be: Independent events

197-The number of parameters in hyper geometric distribution is (are) --3

198-If Y=bX, then variance of Y is -- $b^2 Var(x)$

199-In regression line Y=a+bX, Where Y is called: Dependent variable

200-If A and B are mutually exclusive events with P (A) =0.25 and P (B) = 0.50, Then P (A or B) =0.75

201-In a 52 well shuffled pack of 52 playing cards, the probability of drawing any one diamond card is—13/52

202-The probability of drawing a red queen card from well-shuffled pack of 52 playing cards is—2/52

203-A student solved 25 questions from first 50 questions of a book to be solved. The probability that he will solve the remaining all questions are—0.5=25/50

204-Which of the following measures of dispersion are based on deviations from the mean? Variance-Standard deviation-Mean deviation -All of these

205-What does it mean when a data set has a standard deviation equal to zero? All of the data have the same value.

206-A set of possible values that a random variable can assume and their associated probabilities of occurrence are referred to as-Probability distribution

207-When two dice are rolled the number of possible sample points is =**36**

208-When we toss a coin , we get only 1 outcome

209-Which of the following is not a measure of central tendency? Standard deviation

210-Random experiment can be repeated any no. of times under the…… conditions. Similar

211-In regression analysis, the variable that is being predicted is the-- Dependent variable

212-The probability of continuous random variable x on any particular point is always zero. ----------Yes

213- As a rule if p-value is-----the level of significance then we should reject H0.Less than

214-The range of the data is 24 and the number of class is 8.calculate class interval-3

215-Name the measure of dispersion that are Not based on all the values. Range & Q.D

216-What is the mode in the world STATISTICS—S,T

217-Degree of freedom >2 the variance of t-distribution is always .Greater than 1

218-How the standard error is decreased—by increasing the sample size

219- The variable plotted on the horizontal or x-axis in a scatter diagram is called the---independent variable

220-Which one of the following measures is not used in 'Five number summary? $\bar{X}$

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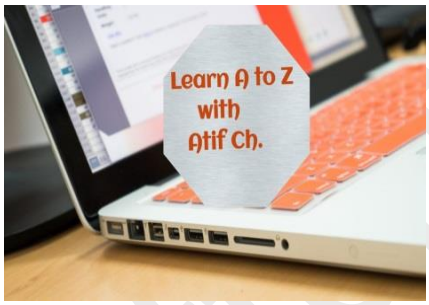

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