



Directorate General of Training

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foundation

# Core Module 5- Business Analytics QB



EASY

1. If quartile range is 24 then quartile deviation is

- A. 48
- B. 12
- C. 24
- D. 72

ANSWER: B

2. If mean absolute deviation of set of observations is 8.5 then value of quartile deviation is

- A. 7.08
- B. 9.08
- C. 10.2
- D. 11.2

ANSWER: A

3. Sum of all squared deviations is divided by total number of observations to calculate

- A. population deviation
- B. population variance
- C. sample deviation
- D. sample variance

ANSWER: B

4. If for a distribution difference of first quartile and median is greater than difference of median and third quartile then distribution is classified as

- A. absolute open ended
- B. positively skewed
- C. negatively skewed
- D. not skewed at all

ANSWER: B

5. For recorded observation, ratios measured by absolute variation are considered as

- A. non-relative measures
- B. relative measures
- C. high uniform measures
- D. low uniform measures

ANSWER: B

6. If arithmetic mean is multiplied to coefficient of variation then resulting value is classified as

- A. coefficient of deviation
- B. coefficient of mean
- C. standard deviation

D. variance  
ANSWER: C

7. Way of getting information from measuring observation whose outcomes occurrence is on chance is called

- A. beta experiment
- B. random experiment
- C. alpha experiment
- D. gamma experiment

ANSWER: B

8. Probability of second event in situation if first event has been occurred is classified as

- A. series probability
- B. conditional probability
- C. joint probability
- D. dependent probability

ANSWER: B

9. If vertical lines are drawn at every point of straight line in frequency polygon then by this way frequency polygon is transformed into

- A. width diagram
- B. length diagram
- C. histogram
- D. dimensional bar charts

ANSWER: C

10. Analysis of labor turnover rates, performance appraisal, training programs and planning of incentives are examples of role of

- A. statistics in personnel management
- B. statistics in finance
- C. statistics in marketing
- D. statistics in production

ANSWER: A

11. If standard deviation of population is 35 and sample size is 9 then standard deviation of sampling distribution is

- A. 12.67
- B. 11.67
- C. 13.67
- D. 14.67

ANSWER: B

12. If arithmetic mean is considered as average of deviations then resultant measure is considered as

- A. close end deviation
- B. mean absolute deviation
- C. mean deviation
- D. variance deviation

ANSWER: B

13. If positive square root is taken of population variance then calculated measure is transformed into

- A. standard root
- B. standard deviation
- C. standard variance
- D. sample variance

ANSWER: B

14. Focus groups, individual respondents and panels of respondents are classified as

- A. pointed data sources
- B. itemized data sources
- C. secondary data sources
- D. primary data sources

ANSWER: D

15. Variables whose measurement is done in terms such as weight, height and length are classified as

- A. continuous variables
- B. measuring variables
- C. flowchart variables
- D. discrete variables

ANSWER: A

16. Diagrams such as cubes and cylinders are classified as

- A. one dimension diagrams
- B. two dimension diagram
- C. three dimensional diagrams
- D. dispersion diagrams

ANSWER: C

17. In binomial probability distribution, dependents of standard deviations must includes

- A. probability of q
- B. probability of p

- C. trials
- D. all of above

ANSWER: D

18. At a manufacturing plant, unit of quantity manufactured in 8 days are 250, 320, 240, 210, 260, 330, 310, 260

- A. 210
- B. 260
- C. 240
- D. 250

ANSWER: B

19. Examples of applications of range in real world includes

- A. weather forecasts
- B. quality control
- C. fluctuation in share prices
- D. all of above

ANSWER: D

20. Formula of coefficient of range is

- A.  $L+L/H+H$
- B.  $H+H/L+L$
- C.  $H-L/H+L$
- D.  $H+H/H-L$

ANSWER: C

21. Discrete variables and continuous variables are two types of

- A. open end classification
- B. time series classification
- C. qualitative classification
- D. quantitative classification

ANSWER: D

22. In a set of observations, amount of variation can be shown in form of figures with help of

- A. absolute measures
- B. uniform measures
- C. non-uniform measures
- D. exploratory measures

ANSWER: A

23. Technique used to analyze unemployment rate, inflation rate anticipation and capacity utilization to manufacture goods is classified as

- A. data supplying technique
- B. forecasting technique
- C. data importing technique
- D. data exporting technique

ANSWER: B

24. Probability which is based on self-beliefs of persons involved in experiment is classified as

- A. subjective approach
- B. objective approach
- C. intuitive approach
- D. sample approach

ANSWER: A

25. Numerical methods and graphical methods are specialized procedures used in

- A. social statistics
- B. business statistics
- C. descriptive statistics
- D. education statistics

ANSWER: C

26. If first quartile and third quartile are as 32 and 35 respectively with median of 20 then distribution is skewed to

- A. lower tail
- B. upper tail
- C. close end tail
- D. open end tail

ANSWER: A

27. If beta one is 9, beta two is 11 then coefficient of skewness is

- A. 0.589
- B. 0.689
- C. 0.489
- D. 0.889

ANSWER: B

28. If value of first quartile is 49 and value of third quartile is 60 then value of inter quartile range is

- A. 21
- B. 31
- C. 11
- D. 41

ANSWER: C

29. Formula to calculate standardized normal random variable is

- A.  $x - \mu/\sigma$
- B.  $x + \mu/\sigma$
- C.  $x - \sigma/\mu$
- D.  $x + \sigma/\mu$

ANSWER: A

30. In probability theories, events which can never occur together are classified as

- A. collectively exclusive events
- B. mutually exhaustive events
- C. mutually exclusive events
- D. collectively exhaustive events

ANSWER: C

31. If total sum of square is 20 and sample variance is 5 then total number of observations are

- A. 15
- B. 25
- C. 4
- D. 35

ANSWER: C

32. If set of observations is 11, 13, 15, 12, 16, 18, 19, 14, 20, 17 and absolute mean deviation is 12 then percentage of coefficient of mean absolute deviation is

- A. 47.41%
- B. 57.41%
- C. 67.41%
- D. 77.41%

ANSWER: D

33. Median, mode, deciles and percentiles are all considered as measures of

- A. mathematical averages
- B. population averages
- C. sample averages
- D. averages of position

ANSWER: D

34. In random experiment, observations of random variable are classified as

- A. events
- B. composition
- C. trials
- D. functions

ANSWER: C

35. In systematic sampling, value of k is classified as

- A. sampling interval
- B. sub stage interval
- C. secondary stage interval
- D. multistage interval

ANSWER: A

36. Measure of how well is a technique, concept or process is considered as

- A. continuity of variables
- B. goodness of variables
- C. validity
- D. reliability

ANSWER: C

37. In stem and leaf display diagrams used in exploratory analysis, stems are considered as

- A. central digits
- B. trailing digits
- C. leading digits
- D. dispersed digits

ANSWER: C

38. Joint probability of independent events J and K is equal to

- A.  $P(J) * P(K)$
- B.  $P(J) + P(K)$
- C.  $P(J) * P(K) + P(J-K)$



D.  $P(J) * P(K) - P(J * K)$

ANSWER: A

39. In binomial distribution, formula of calculating standard deviation is

- A. square root of p
- B. square root of pq
- C. square root of npq
- D. square root of np

ANSWER: C

40. Variability which is defined as difference between third and first quartile is considered as

- A. quartile range
- B. deciles range
- C. percentile range
- D. inter quartile range

ANSWER: D

41. Measurement techniques used to measure extent of skewness in data set values are called

- A. measure of distribution width
- B. measure of median tail
- C. measure of tail distribution
- D. measure of skewness

ANSWER: D

42. Variance of random variable x of gamma distribution can be calculated as

- A.  $\text{Var}(x) = n + 2/\mu^{\text{sup}2}$ ;
- B.  $\text{Var}(x) = n/\mu^{\text{sup}2}$ ;
- C.  $\text{Var}(x) = n * 2/\mu^{\text{sup}2}$ ;
- D.  $\text{Var}(x) = n - 2/\mu^{\text{sup}3}$ ;

ANSWER: B

43. Branch of statistics which considers ratio scale and interval scale is considered as

- A. parametric statistics
- B. non-parametric statistics
- C. distribution statistics
- D. sampling statistics

ANSWER: A

44. In two units of company, employees in unit one are 650 and monthly salary is \$2750, employees in unit two are 700 and monthly salary is \$2500 then combined arithmetic mean is

- A. \$2,620
- B. \$2,520
- C. \$2,420
- D. \$2,320

ANSWER: A

45. Mean of squared deviations which is calculated from arithmetic mean is called

- A. mean square average
- B. standard square average
- C. population average
- D. sample square average

ANSWER: A

46. Statistical measures such as average deviation, standard deviation and mean are classified as part of

- A. deciles system
- B. moment system
- C. percentile system
- D. quartile system

ANSWER: B

47. Classification method in which upper limit of interval is same as of lower limit class interval is called

- A. exclusive method
- B. inclusive method
- C. mid-point method
- D. ratio method

ANSWER: A

48. Method of calculating skewness which is based on positions of quartiles and median in a distribution is called

- A. Gary's coefficient of skewness
- B. Sharma's coefficient of skewness
- C. Bowley's coefficient of skewness
- D. Jack Karl's coefficient of skewness

ANSWER: C

49. Formula in which Poisson probability distribution approaches normal probability distribution with help of normal variable is written as

- A.  $x + \lambda / \text{square root of } \lambda$
- B.  $x * \lambda / \text{square root of } x * \lambda$
- C.  $x - \lambda / \text{square root of } \lambda$
- D.  $x + \lambda / \text{square root of } pq\lambda$

ANSWER: C

50. Reports on quality control, production and financial accounts issued by companies are considered as

- A. external secondary data sources
- B. internal secondary data sources
- C. external primary data sources
- D. internal primary data sources

ANSWER: B

51. Measure of distance which is greatly influenced by extreme values in data is considered as

- A. range
- B. average
- C. positive uniformity
- D. negative uniformity

ANSWER: A

52. Distribution whose function is calculated by considering Bernoulli trials that are infinite in number is classified as

- A. negative Poisson distribution
- B. bimodal cumulative distribution
- C. common probability distribution
- D. negative binomial probability distribution

ANSWER: D

53. In every phenomenon, process of thought that focus on identifying, controlling and reduction of variations in data is classified as

- A. parallel thinking
- B. serial thinking
- C. statistical thinking
- D. managerial thinking

ANSWER: C

54. Type of cumulative frequency distribution in which class intervals are added in top to bottom order is classified as

- A. variation distribution
- B. less than type distribution
- C. more than type distribution
- D. marginal distribution

ANSWER: B

55. Type of stratified proportion sampling in which information is gathered on convenience basis from different groups of population is classified as

- A. purposive sampling
- B. judgment sampling
- C. quota sampling

D. convenience sampling

ANSWER: C

56. Median of a moderately skewed distribution is 8, third quartile is 12, first quartile is 8 and inter-quartile range is 4 then relative coefficient of skewness is

A.  $\pm 8$

B.  $\pm 1$

C.  $\pm 9$

D.  $\pm 11$

ANSWER: B

57. If most repeated observations recorded are outliers of data then mode is considered as

A. intended measure

B. percentage measure

C. best measure

D. poor measure

ANSWER: D

58. Data based on workers salary is as 2500, 2700, 2600, 2800, 2200, 2100, 2000, 2900, 3000, 2800, 2200, 2500, 2700, 2800, 2600 and number of classes desired is 10 then width of class interval is

A. 400

B. 300

C. 100

D. 200

ANSWER: C

59. Number of observations are 30 and value of arithmetic mean is 15 then sum of all values is

A. 15

B. 450

C. 200

D. 45

ANSWER: B

60. Value of  $\Sigma fx$  is 180,  $A = 22$ , and width of class interval is 5, arithmetic mean is 120 then observations are

A. 59

B. 30

C. 39.5

D. 49.5

ANSWER: B

61. Mean absolute deviation is 5 and arithmetic mean is 110 then coefficient of mean absolute deviation is

A. 1.054

B. 0.045

C. 0.054

D. 0.064

ANSWER: B

62. In Poisson probability distribution, if value of  $\lambda$  is integer then distribution will be

A. bimodal

B. unimodal

C. positive modal

D. negative modal

ANSWER: A

63. Moment about population mean which is expressed in standard units is denoted by

A. Latin letter beta

B. Greek letter gamma

C. Greek letter alpha

D. Greek letter beta

ANSWER: C

64. Mean of binomial probability distribution is 857.6 and probability is 64% then number of values of binomial distribution

A. 1040

B. 1340

C. 1240

D. 1140

ANSWER: B

65. Convenient summarizing method which is used to describe population characteristics rather than explaining samples of that population is classified as

A. unstable moments

B. stable moments

C. lower moments

D. higher moments

ANSWER: D

66. Tail or head, one or zero and girl and boy are examples of

A. non-functional events

B. complementary events

C. non complementary events

D. functional events

ANSWER: B

67. Scale which categorize events in collectively exhaustive manner and mutually exclusive manner is classified as

A. discrete scale

B. continuous scale

- C. valid scale
- D. nominal scale

ANSWER: D

68. Consider two events X and Y,  $\bar{X}$  and  $\bar{Y}$  represents

- A. occurrence of Y
- B. occurrence of X
- C. non-occurrence of X and Y
- D. occurrence of X and Y

ANSWER: C

69. Value of  $\sum fx$  is 300,  $A = 35$ , number of observations are 15 and width of class interval is 5 then arithmetic mean is

- A. 135
- B. 145
- C. 150
- D. 235

ANSWER: A

70. In measuring probability of any certain event, zero represents

- A. impossible events
- B. possible events
- C. certain event
- D. sample event

ANSWER: A

71. Largest value is 60 and smallest value is 40 and number of classes desired is 5 then class interval is

- A. 20
- B. 4
- C. 25
- D. 15

ANSWER: B

72. If value of p is smaller or lesser than 0.5 then binomial distribution is classified as

- A. skewed to right
- B. skewed to left
- C. skewed to infinity
- D. skewed to integers

ANSWER: A

73. Number of patients who visited cardiologists are as 63, 57, 51, 65 in four days then absolute mean deviation (approximately) is

- A. 8 patents
- B. 4 patients
- C. 10 patients
- D. 15 patients

ANSWER: B

74. Number of individuals arriving at boarding counter on an airport is an example of

- A. numerical outcome
- B. non numerical outcome
- C. random outcome
- D. simple outcome

ANSWER: A

75. In terms of dispersion difference, measurement of dispersion for available data is classified as

- A. average measures
- B. distance measures
- C. average deviation measures
- D. availability measures

ANSWER: B

76. Parameters of population are denoted by the

- A. roman letters
- B. lower case Greek letter
- C. upper case Greek letter
- D. associated roman alphabets

ANSWER: B

77. Variation in which outcomes of experiments are effected by uncontrolled factors is considered as

- A. random variation
- B. mesokurtic variation
- C. platykurtic variation
- D. mesokurtic variation

ANSWER: A

78. If  $\mu$  is equal to 8 then standard deviation of exponential probability distribution is

- A. 0.425
- B. 0.125
- C. 0.225
- D. 0.325

ANSWER: B

79. For set of values, percentage of values that lies within population mean plus four standard deviations of population is

- A. 83.75%
- B. 93.75%
- C. 95%
- D. 98.75%

ANSWER: B

80. In binomial distribution, formula of calculating mean is

- A.  $\mu = p + q$
- B.  $\mu = np$
- C.  $\mu = pq$
- D.  $\mu = qn$

ANSWER: B

81. Considering sales, coefficient of variation for product X is 9.3% and coefficient of variation for product Y is 8.9% then sales fluctuation of

- A. product X is higher
- B. product Y is higher
- C. product X is lower
- D. product X and Y is lower

ANSWER: A

82. If two events X and Y are considered as partially overlapping events then rule of addition can be written as

- A.  $P(X \text{ or } Y) = P(X) - P(Y) + P(X \text{ and } Y)$
- B.  $P(X \text{ or } Y) = P(X) + P(Y) * P(X - Y)$
- C.  $P(X \text{ or } Y) = P(X) * P(Y) + P(X - Y)$
- D.  $P(X \text{ or } Y) = P(X) + P(Y) - P(X \text{ and } Y)$

ANSWER: D

83. Type of rating scale which allows respondents to choose most relevant option out of other stated options is classified as

- A. marking rating scale
- B. graphical rating scale
- C. itemized rating scale
- D. pointed rating scale

ANSWER: C

84. Considering standard deviation, mean absolute deviation is equal to

- A.  $5/4\sigma$
- B.  $5/8\sigma$
- C.  $4/5\sigma$
- D.  $7/8\sigma$

ANSWER: C

85. Moment about mean which is indication whether distribution is symmetrical or asymmetrical is considered as

- A. first moment
- B. third moment
- C. second moment
- D. fourth moment

ANSWER: B



86. If a person buys a lottery, chance of winning a Toyota car is 60%, chance of winning Hyundai car is 70% and chance of winning both is 40% then chance of winning Toyota or Hyundai is

- A. 0.6
- B. 0.9
- C. 0.8
- D. 0.5

ANSWER: B

87. Kurtosis defines peakness of curve in region which is

- A. around the mode
- B. around the mean
- C. around the median
- D. around the variance

ANSWER: A

88. Summary and presentation of data in tabular form with several non-overlapping classes is referred as

- A. nominal distribution
- B. ordinal distribution
- C. chronological distribution
- D. frequency distribution

ANSWER: D

89. Mistakes or biases which are considered as causes of non-sampling errors must includes

- A. incorrect enumeration of population
- B. non random sample selection
- C. incomplete questionnaire
- D. all of above

ANSWER: D

90. Regardless to difference in distribution of sample and population, mean of sampling distribution must be equal to

- A. degree of freedom
- B. statistic error
- C. population mean
- D. standard error

ANSWER: C

91. Mean absolute deviation is divided by coefficient of mean absolute deviation to calculate

- A. variance
- B. median
- C. arithmetic mean
- D. coefficient of variation

ANSWER: C

92. Difference between highest and lowest observation is 20 and coefficient of range is 0.077 then sum of highest and lowest value is

- A. 210
- B. 220
- C. 260
- D. 240

ANSWER: C

93. Quartiles, median, percentiles and deciles are measures of central tendency classified as

- A. paired average
- B. deviation averages
- C. positioned averages
- D. central averages

ANSWER: C

94. Government and non-government publications are considered as

- A. external secondary data sources
- B. internal secondary data sources
- C. external primary data sources
- D. internal primary data sources

ANSWER: A

95. In manufacturing company, number of employees in unit A is 40, mean is USD \$6400 and number of employees in unit B is 30 with mean of Rs. 5500 then combined arithmetic mean is

- A. 9500
- B. 8000
- C. 7014.29
- D. 6014.29

ANSWER: D

96. If quartile deviation of given set of data of 20 observations is 12 then value of standard deviation is

- A. 1.667
- B. 18
- C. 8
- D. 32

ANSWER: B

97. According to combination rule, if total number of outcomes are 'r' and distinct outcome collection is 'n' then combinations are calculated as

- A.  $n!/r!(n - r)!$
- B.  $n!/r!(n + r)!$
- C.  $r!/n!(n - r)!$
- D.  $r!/n!(n + r)!$

ANSWER: A

98. Cluster sampling, stratified sampling and systematic sampling are types of

- A. direct sampling
- B. indirect sampling
- C. random sampling
- D. non random sampling

ANSWER: C

99. Considering probability distribution, if mode is greater than median then distribution is classified as

- A. variable model
- B. right skewed
- C. left skewed
- D. constant model

ANSWER: B

100. Types of descriptive measures includes

- A. measures of skewness
- B. measures of dispersion
- C. measures of central tendency
- D. all of above

ANSWER: D

101. Value which is obtained by multiplying possible values of random variable with probability of occurrence and is equal to weighted average is called

- A. discrete value
- B. weighted value
- C. expected value
- D. cumulative value

ANSWER: C

102. Bias occurred in collection of sample because of confusing questions in questionnaire is classified as

- A. non-responsive bias
- B. non distribution bias
- C. non wording bias
- D. wording bias

ANSWER: D

103. High uniformity of 50% observations around median value is indicated with help of

- A. larger value of quartile deviation
- B. smaller value of quartile deviation
- C. larger value of range deviation
- D. smaller value of range deviation

ANSWER: B

104. According to percentiles, median to be measured must lie in

- A. 80th
- B. 40th
- C. 50th
- D. 100th

ANSWER: C

105. Outcomes of an experiment are classified as

- A. logged events
- B. exponential results
- C. results
- D. events

ANSWER: D

106. Range or set of values which have chances to contain value of population parameter with particular confidence level is considered as

- A. secondary interval estimation
- B. confidence interval estimate
- C. population interval estimate
- D. sample interval estimate

ANSWER: B

107. Bias in which few respondents responds to offered questionnaire is classified as

- A. responsive bias
- B. non-responsive bias
- C. distributed error
- D. concerning error

ANSWER: A

108. Frequency distribution is considered as negatively skewed if all values of distribution moves to

- A. lower tail
- B. median tail
- C. variance tail
- D. upper tail

ANSWER: A

109. Upper and lower boundaries of interval of confidence are classified as

- A. error biased limits
- B. marginal limits
- C. estimate limits

D. confidence limits

ANSWER: D

110. In kurtosis, beta is greater than three and quartile range is preferred for

- A. mesokurtic distribution
- B. mega curve distribution
- C. leptokurtic distribution
- D. platykurtic distribution

ANSWER: D

111. Classification method in which upper and lower limits of interval is also in class interval itself is called

- A. exclusive method
- B. inclusive method
- C. mid-point method
- D. ratio method

ANSWER: B

112. Principle which states that larger sample size larger accuracy and stability is part of

- A. principle of sampling error
- B. principle of inertia
- C. principle of statistical regularity
- D. principle of statistical irregularity

ANSWER: B

113. Relative measures in measures of dispersion are also considered as

- A. coefficient of deviation
- B. coefficient of average
- C. coefficient of variation
- D. coefficient of uniformity

ANSWER: C

114. Number of products manufactured in a factory in a day are 3500 and probability that some pieces are defected is 0.55 then mean of binomial probability distribution is

- A. 1925
- B. 6364
- C. 63.64
- D. 3500

ANSWER: A

115. For a parameter whose value is unknown, belief or claim for that parameter is classified as

- A. parameter claim testing
- B. expected belief testing
- C. hypothesis testing
- D. primary limit testing

ANSWER: C

116. Standard deviation is divided by coefficient of variation to calculate

- A. arithmetic mean
- B. coefficient of arithmetic
- C. coefficient of variance
- D. multiplier of deviation

ANSWER: A

117. Frequency distribution whose most values are dispersed to left or right of mode is classified as

- A. skewed
- B. explored
- C. bimodal
- D. unimodal

ANSWER: A

118. If value of interval a is 2.5 and value of interval b is 3.5 then value of mean for uniform distribution is

- A. 0.5
- B. 3
- C. 2.5
- D. 3.5

ANSWER: B

119. Harmonic mean, arithmetic mean and geometric mean are all considered as

- A. mathematical averages
- B. population averages
- C. sample averages
- D. extended measures

ANSWER: A

120. If standard deviation is 7 then mean absolute deviation is

- A. 9.75
- B. 5.6
- C. 7
- D. 8.75

ANSWER: B

121. Value of  $\sum fd$  is 250,  $A = 25$ , number of observations are 12 and width of class interval is 6 then arithmetic mean is

- A. 25
- B. 250
- C. 150
- D. 275

ANSWER: C

122. In measures of skewness, absolute skewness is equal to

- A. mean+mode
- B. mean-mode
- C. mean+median
- D. mean-median

ANSWER: B

123. Diagrams used to represent grouped and ungrouped data is classified as

- A. breadth diagrams
- B. bar diagrams
- C. width diagrams
- D. length diagrams

ANSWER: B

124. According to empirical rule, standard deviation and mean interval that covers approximately 99.75% of data from a frequency distribution is

- A.  $4\mu \pm 4\sigma$
- B.  $3\mu \pm 3\sigma$
- C.  $\mu \pm 3\sigma$
- D.  $2\mu \pm 2\sigma$

ANSWER: C

125. If arithmetic mean is 25 and harmonic mean is 15 then geometric mean is

- A. 17.36
- B. 16.36
- C. 15.36
- D. 19.36

ANSWER: D

126. General tables of data used to show data in orderly manner is called as

- A. single characteristics tables
- B. repository tables
- C. manifold tables
- D. double characteristic table

ANSWER: B

127. Frequencies of all specific values of x and y variables with total calculated frequencies are classified as

- A. variate frequencies
- B. unconditional frequencies
- C. conditional frequencies
- D. marginal frequencies

ANSWER: D

128. Theorem which states least percentage of values that fall within z-standard deviations is classified as

- A. Chebyshev's Theorem
- B. sampling theorem

- C. Pearson Theorem
- D. population theorem

ANSWER: A

129. Type of variable which can take fixed integer values is classified as

- A. flowchart variable
- B. discrete variable
- C. continuous variable
- D. measuring variables

ANSWER: B

130. In binomial probability distribution, success and failure generated by trial is respectively denoted by

- A.  $p$  and  $q$
- B.  $a$  and  $b$
- C.  $p + q$
- D.  $p - q$

ANSWER: A

131. For a random experiment, all possible outcomes are called

- A. numerical space
- B. event space
- C. sample space
- D. both b and c

ANSWER: D

132. Unknown or exact value that represents whole population is classified as

- A. parameters
- B. estimators
- C. absolute statistics
- D. coverage estimator

ANSWER: A

133. Types of probabilities for independent events must includes

- A. joint events
- B. marginal events
- C. conditional events
- D. all of above

ANSWER: D

134. Considering types of diagrams, squares, circles and rectangles are classified as

- A. cumulative diagram
- B. dispersion diagrams
- C. one dimension diagrams
- D. two dimension diagram

ANSWER: D



135. If value of success in binomial probability distribution is 0.40 and failure is 0.60 and number of values in distribution are 5 then moment coefficient of skewness is

- A. 0.467
- B. 0.167
- C. 0.267
- D. 0.367

ANSWER: B

136. Sum of values of data is divided by total number of values is used to calculate

- A. arithmetic mean
- B. weighted average mean
- C. geometric mean
- D. harmonic mean

ANSWER: A

137. Considering moments in standard units, fourth alpha with power 1 is equivalent to

- A. beta three
- B. beta four
- C. beta one
- D. beta two

ANSWER: D

138. Class of variable which can accept any value within upper and lower limit is classified as

- A. posterior random variable
- B. interior random variable
- C. discrete random variable
- D. continuous random variable

ANSWER: D

139. Type of cumulative frequency distribution in which class intervals are added in bottom to top order is classified as

- A. more than type distribution
- B. marginal distribution
- C. variation distribution
- D. less than type distribution

ANSWER: A

140. Listing of elements in population with identifiable number is classified as

- A. regularity experimental frame
- B. indirect experiment frame
- C. direct experimental frame
- D. frame for experiment

ANSWER: D

141. Probability without any conditions of occurrence of an event is considered as

- A. conditional probability
- B. marginal probability
- C. non conditional probability
- D. occurrence probability

ANSWER: B

142. 'less than type distribution' and 'more than type distribution' are types of

- A. class distribution
- B. cumulative class distribution
- C. cumulative frequency distribution
- D. upper limit distribution

ANSWER: C

143. Difference of mode and mean is equal to

- A. 3(mean-median)
- B. 2(mean-median)
- C. 3(mean-mode)
- D. 2(mode mean)

ANSWER: A

144. If mean is 11 and median is 13 then value of mode is

- A. 15
- B. 13
- C. 11
- D. 17

ANSWER: D

145. Categories of measures of dispersion are classified as

- A. uniform measures
- B. relative measures
- C. absolute measures
- D. both b and c

ANSWER: D

146. If central tendency is found by using whole population as input data then this is classified as

- A. sample statistic
- B. population statistic
- C. population tendency
- D. population parameters

ANSWER: D

147. Criteria of inferential statistics which considers sum of squared deviations is classified as

- A. central squares criterion
- B. outliers square criterion
- C. multiple squares criterion
- D. least squares criterion

ANSWER: D

148. For Karl Pearson's skewness coefficient value of skewness must be in limits

- A.  $\pm 3$
- B.  $\pm 5$
- C.  $\pm 4$
- D.  $\pm 2$

ANSWER: A

149. If standard deviation of population 1 is 3 with sample size is 8 and population 2 standard deviation is 5 with sample size is 7 then standard deviation of sampling distribution is

- A. 4.044
- B. 3.044
- C. 1.044
- D. 2.044

ANSWER: C

150. Considering sample statistic, if mean of sampling distribution is equal to population mean then sample statistic is classified as

- A. unbiased estimator
- B. biased estimator
- C. interval estimator
- D. hypothesis estimator

ANSWER: A

151. Data which is generated within company such as routine business activities is classified as

- A. external primary data sources
- B. internal primary data sources
- C. external secondary data sources
- D. internal secondary data sources

ANSWER: D

152. Exclusive method and inclusive method are ways of classifying data on basis of

- A. manifold classes
- B. rational intervals
- C. class width
- D. class intervals

ANSWER: D

153. Histograms, pie charts and frequency polygons are all types of

- A. one dimension diagrams
- B. two dimension diagrams
- C. cumulative diagrams
- D. dispersion diagrams

ANSWER: A

154. In statistical analysis, sample size is considered large if

- A.  $n > \text{or} = 30$
- B.  $n < \text{or} = 30$
- C.  $n > \text{or} = 50$
- D.  $n < \text{or} = 50$

ANSWER: A

155. If value of  $x$  for normal distribution is 35, mean of normal distribution is 65 and standard deviation is 25 then standardized random variable is

- A. 1. -1.5
- B. 2. -1.2
- C. 3. -1.7
- D. 4. -4

ANSWER: B

156. In a negative skewed distribution, order of mean, median and mode is as

- A. mean<median>mode
- B. mean>median>mode
- C. mean<median<mode
- D. mean>median<mode

ANSWER: C

157. Measure which describes detailed characteristic of whole data set is classified as

- A. average or central value
- B. positive skewed value
- C. negative skewed value
- D. positive extended value

ANSWER: A

158. Population variance is also called

- A. sigma squared
- B. negative sigma
- C. square root
- D. cubic root

ANSWER: A

159. Lesser uniformity of 50% observations around median value is indicated with help of

- A. larger value of range deviation
- B. smaller value of range deviation
- C. larger value of quartile deviation

D. smaller value of quartile deviation

ANSWER: C

160. Question which have different answers for its subparts is considered as

- A. double barreled questions
- B. single barreled questions
- C. multiple barreled questions
- D. dichotomous questions

ANSWER: A

161. If standard deviation of population is known then  $\mu$  must be equal to

- A. absolute value of estimator
- B. error free mean
- C. expected value of mean
- D. inferential value of mean

ANSWER: C

162. Formula of calculating mean for hyper geometric probability distribution is

- A.  $n (m/n)$
- B.  $m (n/n)$
- C.  $n (n/m)$
- D.  $n (m/n)$

ANSWER: D

163. Formula in which binomial distribution approaches normal probability distribution with help of normal variable is written as

- A.  $x - qn$  divided by square root of  $pq$
- B.  $x - np$  divided by square root of  $npq$
- C.  $x + np$  divided by square root of  $np$
- D.  $x - pq$  divided by square root of  $npq$

ANSWER: B

164. Term used to describe frequency curve is

- A. symmetrical distribution
- B. symmetry and kurtosis
- C. kurtosis of distribution
- D. relative frequency curve

ANSWER: B

165. Extent to which values are dispersed around central observation is considered as

- A. trailing
- B. variation
- C. extension
- D. centralized valuation

ANSWER: B

166. Analytical study of relationship between output commodity and its price is classified as

- A. demand analysis
- B. supply analysis
- C. imports analysis
- D. export analysis

ANSWER: A

167. If large number of values lies in central part of data table then spread of values is measured by

- A. percentile range
- B. inter quartile range
- C. quartile range
- D. deciles range

ANSWER: B

#### INTERMEDIATE

168. If value of m in beta distribution is 35 and value of n in beta distribution is 50 then expected value of random variable x in beta distribution is

- A. 0.411
- B. 0.311
- C. 0.511
- D. 0.211

ANSWER: A

169. Formula which considers relationship between set of observations, standard deviation and mean is classified as

- A. empirical value
- B. three way rule
- C. normal rule
- D. both a and c

ANSWER: D

170. Methods in statistics that uses sample statistics to estimate parameters of population are considered as

- A. inferential statistics
- B. absolute statistics
- C. coverage statistics
- D. random sample statistics

ANSWER: A

171. Third step in constructing frequency distribution is to

- A. select appropriate class intervals
- B. determine class intervals

- C. determine class limits
- D. determine midpoints of classes

ANSWER: C

172. If calculated value of total sum of squares in sample variance is larger than variation in data set is considered as

- A. smaller
- B. greater
- C. zero
- D. negative

ANSWER: B

173. Distribution is considered leptokurtic if

- A. beta three is less than three
- B. beta two is greater than two
- C. beta three is greater than three
- D. beta two is greater than three

ANSWER: D

174. Manner in which geometric mean, harmonic mean and arithmetic mean are related is as

- A.  $A.M > G.M > H.M$
- B.  $A.M$
- C.  $A.M < G.M$
- D.  $A.MH.M$

ANSWER: A

175. In systematic sampling, population is 200 and selected sample size is 50 then sampling interval is

- A. 250
- B. 0.25
- C. 4
- D. 40

ANSWER: C

176. In a negative binomial distribution of probability, random variable is also classified as

- A. discrete random variable
- B. continuous waiting time random variable
- C. discrete waiting time random variable
- D. discrete negative binomial variable

ANSWER: C

177. Process of converting inputs into outputs in presence of repeatedly same conditions is classified as

- A. sampler

- B. parameters
- C. process
- D. mixer

ANSWER: C

178. Statistical measures such as deciles, percentiles, median and quartiles are classified as part of

- A. percentile system
- B. quartile system
- C. deciles system
- D. moment system

ANSWER: A

179. Demand of products per day for three days are 21, 19, 22 units and their respective probabilities are 0.29, 0.40, 0.35. profit per unit is \$0.50 then expected profits for three days are

- A. 21, 19, 22
- B. 21.5, 19.5, 22.5
- C. 0.29, 0.40, 0.35
- D. 3.045, 3.8, 3.85

ANSWER: D

180. For ungrouped data in calculation of moments from mean, formula to calculate this measure is

- A.  $\frac{1}{n} \sum (x - \text{mean})^r$
- B.  $\frac{2}{n} \sum (x - \text{mean})^r$
- C.  $\frac{2}{n} \sum (x + \text{mean})^r$
- D.  $\frac{2}{n} \sum (x + \text{mean})^x$

ANSWER: A

181. Joint probability of two statistical dependent events Y and Z can be written as  $P(Y \text{ and } Z) =$

- A.  $P(Z + Y) * P(Y|Z)$
- B.  $P(Y) * P(Z|Y)$
- C.  $P(Y) * P(Z|Y) + P(Z)$
- D.  $P(Y) * P(Z|Y) - P(Z + Y)$

ANSWER: B

182. In a Venn diagram used to represent probabilities, sample space of events is represented by

- A. square
- B. triangle
- C. circle
- D. rectangle

ANSWER: D



183. Formula of mean of uniform or rectangular distribution is as

- A. mean =  $4(b + a)/2b$
- B. mean =  $(b + a)/2$
- C. mean =  $(b - 2a)/4$
- D. mean =  $(2a + 2b)/2a$

ANSWER: B

184. Distribution which shows cumulative figure of all observations placed below upper limit of classes in distribution is considered as

- A. cumulative frequency distribution
- B. upper limit distribution
- C. class distribution
- D. cumulative class distribution

ANSWER: A

185. Standard deviation of data is 12 and mean is 72 then coefficient of variation is

- A. 14.67%
- B. 16.67%
- C. 12.67%
- D. 13.67%

ANSWER: B

186. Mode is best measure of tendency if analysis is

- A. descriptive
- B. exploratory
- C. experimental
- D. set of deciles

ANSWER: A

187. Marginal probability of independent events and dependent events must be

- A. same
- B. different
- C. one
- D. two

ANSWER: A

188. Data classification which is based on variables such as production, cost, height and weight is considered as

- A. qualitative classification
- B. quantitative classification
- C. open end classification
- D. time series classification

ANSWER: B

189. In deciles, central tendency median to be measured must lie in

- A. fourth deciles

- B. seventh deciles
- C. sixth deciles
- D. fifth deciles

ANSWER: D

190. Value of third quartile is 61 and inter quartile range of set of observation is 48 then value of first quartile is

- A. 24
- B. 34
- C. 64
- D. 13

ANSWER: D

191. Type of central tendency measures which divides data set into ten equal parts is classified as

- A. percentiles
- B. multiple pile of data
- C. quartiles
- D. deciles

ANSWER: D

192. Normal distribution is also classified as

- A. Gaussian distribution
- B. Poisson distribution
- C. Bernoulli's distribution
- D. weighted average distribution

ANSWER: A

193. In cluster sampling, elements of selected clusters are classified as

- A. elementary units
- B. primary units
- C. secondary units
- D. proportional units

ANSWER: A

194. In statistics out of 100, marks of 21 students in final exams are as 90, 95, 95, 94, 90, 85, 84, 83, 85, 81, 92, 93, 82, 78, 79, 81, 80, 82, 85, 76, 85 then mode of data is

- A. 85
- B. 95
- C. 90
- D. 81

ANSWER: A

195. Three dimensional diagrams are named as so because they considers both

- A. length and breadth
- B. breadth and depth

- C. depth, length and breadth
- D. depth and length

ANSWER: C

196. Type of classification in which class is subdivided into subclasses and subclasses are divided into more classes is considered as

- A. simple classification
- B. manifold classification
- C. rational classification
- D. reflected classification

ANSWER: B

197. Method of sampling in which population is divided in to mutual exclusive groups that have useful context in statistical research is classified as

- A. stratified sampling
- B. regular group sampling
- C. irregular group sampling
- D. direct group sampling

ANSWER: A

198. Data table which is presented in tabular form on basis of two or more simultaneous characteristics is classified as

- A. percentage table
- B. interval table
- C. simple table
- D. complex table

ANSWER: D

199. If in a formula, mean absolute deviation is numerator and arithmetic mean is denominator then resultant value is classified as

- A. coefficient of mean deviation
- B. coefficient of absolute quartile deviation
- C. coefficient of quartile range deviation
- D. coefficient of mean absolute deviation

ANSWER: D

200. Probability which explains x is equal to or less than particular value is classified as

- A. discrete probability
- B. cumulative probability
- C. marginal probability
- D. continuous probability

ANSWER: B

201. Branch of statistics which deals with development of particular statistical methods is classified as

- A. industry statistics

- B. economic statistics
- C. applied statistics
- D. mathematical statistics

ANSWER: D

202. Consider an event B, non-occurrence of event B is represented by

- A. union of A
- B. complement of A
- C. intersection of A
- D. A is equal to zero

ANSWER: B

203. If sample size is 6 and population is 50 from which it is drawn without replacement and elements for success are 22 then variance of hyper geometric probability distribution is

- A. 1.388
- B. 2.388
- C. 3.388
- D. 4.388

ANSWER: A

204. Types of probability distributions by taking their functions of considerations must include

- A. posterior probability distribution
- B. discrete probability distribution
- C. continuous probability distribution
- D. both b and c

ANSWER: D

205. Technique which implies in statistical process to measure variation in data is called

- A. measures of dispersion
- B. measures of statistics
- C. measures of process
- D. none of above

ANSWER: D

206. Consider probability distribution as standard normal, if value of  $\mu$  is 75, value of x is 120 with unknown standard deviation of distribution then value of z-statistic

- A. will be one
- B. will be zero
- C. will be negative
- D. will be positive

ANSWER: D

207. Data table which is presented in tabular form on basis of single characteristics is classified as

- A. simple table
- B. complex table

- C. percentage table
- D. interval table

ANSWER: A

208. Method of counting outcomes in which number of outcomes are determined while considering ordering is classified as

- A. intersection combinations
- B. union combinations
- C. listed combination
- D. permutations

ANSWER: D

209. Area diagrams and surface diagrams are other names of

- A. single dimension diagrams
- B. two dimensional diagrams
- C. three dimensional diagrams
- D. four dimension diagrams

ANSWER: B

210. If standard deviation is 5 then quartile deviation is

- A. 5
- B. 0.334
- C. 0.234
- D. 0.134

ANSWER: D

211. If mean of population is 25 then mean of sampling distribution is

- A. 25
- B. 5
- C. 30
- D. 35

ANSWER: A

212. Frequency distribution which is result of cross classification is called

- A. bivariate frequency distribution
- B. univariate frequency distribution
- C. multi-variables distribution
- D. close ended distribution

ANSWER: A

213. Types of histograms includes

- A. deviation bar charts
- B. paired bar charts
- C. grouped charts
- D. all of above

ANSWER: D

214. Method of counting outcomes in which number of outcomes are determined without taking care of arrangement order is classified as

- A. listed combinations
- B. union combinations
- C. intersection combination
- D. unlisted combinations

ANSWER: C

215. Coefficient of skewness method in which basis of measuring is deciles and percentiles is classified as

- A. Gary's coefficient of skewness
- B. Sharma's coefficient of skewness
- C. Kelly's coefficient of skewness
- D. Jack Karl's coefficient of skewness

ANSWER: C

216. If value of  $p$  is 0.60 and value of  $n$  is 3 whereas random variable  $x$  is equal to 4 then value of z-score of distribution is

- A. 1.59
- B. 2.59
- C. 2.68
- D. 0.59

ANSWER: B

217. Value of third quartile is 72, second quartile is 52 and first quartile is 45 then quartile deviation is

- A. 13.5
- B. 14
- C. 16.5
- D. 18.5

ANSWER: A

218. Undesirable consequences which causes estimated population variance to appear less as compared to real results are classified as

- A. undesired error
- B. bias
- C. non-calculate error
- D. non-zero error

ANSWER: B

219. Type of variable which can take any numerical figure for calculation is classified as

- A. continuous variable
- B. measuring variable
- C. flowchart variable
- D. discrete variable

ANSWER: A

220. If population parameter  $\mu$  and unbiased estimate of population is  $\bar{x}$  then sampling error is as

- A.  $|\bar{p} - \mu|$
- B.  $|\bar{x} - \mu|$
- C.  $|\bar{x} + \mu|$
- D.  $|\bar{x} * \mu|$

ANSWER: B

221. Outcome of experiment which can be broken into more convenient list of outcomes is called

- A. alpha event
- B. gamma event
- C. simple event
- D. random event

ANSWER: C

222. Classification of data on geographical basis is also called

- A. reflected classification
- B. populated classification
- C. sampling classification
- D. spatial classification

ANSWER: D

223. Theorem which states that as sample size increases sampling distribution must approach normal distribution is classified as

- A. limited approximation theorem
- B. secondary limit theorem
- C. primary limit theorem
- D. central limit theorem

ANSWER: D

224. For grouped data in calculation of moments from mean, formula to calculate this measure is

- A.  $2/n \sum n(x+\text{mean})r$
- B.  $2/n \sum n(x+\text{mean})x$
- C.  $1/n \sum f(x-\text{mean})r$
- D.  $2/n \sum f(x-\text{mean})r$

ANSWER: C

225. Measure of central tendency which is calculated by considering most frequent occurring value as central value is classified as

- A. central mode
- B. mode
- C. frequent value
- D. percent value

ANSWER: B

226. Tools such decision making by nominal groups, brain storming and term buildings are all considered as

- A. serial tools
- B. behavioral tools
- C. statistical tools
- D. parallel tools

ANSWER: B

227. For a rectangular or uniform distribution, value of interval a is 7 and value of interval b is 8 then value of mean for distribution is

- A. 1.33
- B. 3.33
- C. 2.33
- D. 4.33

ANSWER: D

228. Conditions such as large sample size to represent population and samples must be drawn randomly are included in

- A. principle of statistical regularity
- B. principle of statistical irregularity
- C. principle of sampling error
- D. principle of inertia

ANSWER: A

229. One of category of statistical method is

- A. managerial statistics
- B. decision science
- C. inferential statistics
- D. industry statistics

ANSWER: C

230. Condition for negative exponential distribution considering mean ( $\mu$ ) is that

- A.  $\mu$  must be less than zero
- B.  $\mu$  must be greater than one
- C.  $\mu$  must be greater than zero
- D.  $\mu$  must be smaller than twp

ANSWER: C

231. Number of observations are 11 and value of arithmetic mean is 19 then sum of all values is

- A. 209
- B. 30
- C. 8



D. 173

ANSWER: A

232. Set of raw data arranged in ascending or descending order is called

- A. ordered array
- B. nominal array
- C. ordinal array
- D. interval array

ANSWER: A

233. If mean of binomial probability distribution is 25 then mean of Poisson probability distribution is

- A. 70
- B. 50
- C. 25
- D. 50

ANSWER: C

234. If value of  $x$  is less than  $\mu$  of standard normal probability distribution then the

- A. z-statistic is negative
- B. z-statistic is positive
- C.  $f(x)$  will be even number
- D.  $f(x)$  will be prime number

ANSWER: A

235. Branch of statistics in which data is collected according to ordinal scale or nominal scale is classified as

- A. distribution statistics
- B. sampling statistics
- C. parametric statistics
- D. non-parametric statistics

ANSWER: D

236. 2600 applications for home mortgage are received by a bank and probability of approval is 0.78 then standard deviation of binomial probability distribution is

- A. 2028
- B. 546.16
- C. 446.16
- D. 646.16

ANSWER: C

237. Halfway point between lower class limits and upper class limits is classified as

- A. nominal mid-point
- B. class mid-point
- C. interval mid-point
- D. ordinal mid-point

ANSWER: B

238. Measures in sampling that are results of sample analyses are called

- A. absolute statistics parameter
- B. coverage estimators
- C. population statistics
- D. sample statistic

ANSWER: D

239. Time frame to complete a transaction in bank is classified as

- A. parameters
- B. process
- C. mixer
- D. sampler

ANSWER: B

240. Important rules in computation of experimental outcomes includes

- A. multiple experiments
- B. permutations
- C. combinations
- D. all of above

ANSWER: D

241. Type of rating scale which represents response of respondents by marking at appropriate point is classified as

- A. graphic rating scale
- B. responsive scale
- C. pointed scale
- D. marking scale

ANSWER: A

242. Classification on basis of time order is called as

- A. disclosed classification
- B. chronological classification
- C. external classification
- D. internal classification

ANSWER: B

243. For two events, probability of occurrence of both events at same time or occurrence in series is classified as

- A. joint probability
- B. dependent probability
- C. series probability
- D. conditional probability

ANSWER: A

244. Branches of statistics includes

- A. applied statistics
- B. mathematical statistics
- C. industry statistics
- D. both a and b

ANSWER: D

245. All values in sample distribution that can freely varies in selected random sample from population are indicated as

- A. degree of freedom
- B. degree of error
- C. degree of statistic
- D. degree of possibility

ANSWER: A

246. Unifying method to summarize statistical measure of descriptive nature is called

- A. unifying momentum
- B. momentum summary
- C. moments
- D. momentum

ANSWER: C

247. IF population standard deviation is not known then formula used to calculate standard error is as

- A.  $n - 1 / \text{sample size square root}$
- B.  $s / \text{sample size square root}$
- C.  $n + 1 / \text{square root of } s$
- D.  $n * 2 / \text{sample size square root}$

ANSWER: B

248. Type of continuous distribution in which probability is constant is classified as

- A. rectangular distribution
- B. square distribution
- C. open frequency distribution
- D. class frequency distribution

ANSWER: A

249. Considering combination rule of counting outcome, value of  $5!$  is

- A. 5
- B. 120
- C. 24
- D. 20

ANSWER: B

250. Scale which is used to determine ratios equality is considered as

- A. satisfactory scale
- B. ratio scale
- C. goodness scale

D. exponential scale

ANSWER: B

251. Measuring theorem which helps in determining proportion of observations for specific interval of mean and standard deviation is classified as

- A. Pearson Theorem
- B. Chebyshev's Theorem
- C. sampling theorem
- D. population theorem

ANSWER: B

252. If for a distribution difference of first quartile and median is less than difference of median and third quartile then distribution is classified as

- A. negatively skewed
- B. not skewed at all
- C. absolute open ended
- D. positively skewed

ANSWER: D

253. Considering individual values of data set, actual mean must always be

- A. 1
- B. -1
- C. 0
- D. 2

ANSWER: C

254. If value of interval a is 4 and value of interval b is 5 then variance of uniform distribution is

- A. 6.75
- B. 4.75
- C. 5.75
- D. 0.75

ANSWER: A

255. Considering set of observations, percentage of values that lies within population mean plus two standard deviations is

- A. 60%
- B. 55%
- C. 75%
- D. 85%

ANSWER: C

256. In probability theory, events are denoted by

- A. Greek letters
- B. capital letters
- C. small letters

D. Latin letters

ANSWER: B

257. Examples of variables in statistical phenomenon consists

- A. job satisfaction
- B. consumer behaviors
- C. leadership ability
- D. all of THE MENTIONED

ANSWER: D

258. Formula such as  $mn/(m+n)^2(m+n+1)$  is used to calculate

- A. variance in exponential distribution
- B. variance in alpha distribution
- C. variance in gamma distribution
- D. variance in beta distribution

ANSWER: D

259. Measure of variation which is useful for highly skewed distribution is

- A. inter quartile deviation
- B. quartile deviation
- C. inter quartile range
- D. quartile range

ANSWER: B

260. Graphs which represents data on maps are considered as

- A. cartograms
- B. picto-graph
- C. pictograms
- D. symmetry graph

ANSWER: A

261. Class frequency is divided by number of observations in frequency distribution to convert it into

- A. relative margin distribution
- B. relative variable distribution
- C. relative frequency distribution
- D. relative width distribution

ANSWER: C

262. If value of  $\bar{x}$  is 70 and  $\mu$  of sampling distribution is 15 with standard deviation is 20 then standard normal variable is

- A. 2.75
- B. 3.75
- C. 4.75
- D. 5.75

ANSWER: A

263. Uncertainty of elements can be reduced with estimation of

- A. under coverage error
- B. coverage error
- C. sampling error
- D. random sample error

ANSWER: C

264. Histograms and pie charts are classified as one dimensional diagrams because only

- A. length is considered
- B. width is considered
- C. length plus width is considered
- D. breadth is considered

ANSWER: A

265. Procedures of descriptive statistics and control charts which are used to improve process are classified as

- A. statistical tools
- B. parallel tools
- C. serial tools
- D. behavioral tools

ANSWER: A

266. Procedure of selecting desired portion from population which describes characteristics of whole population is

- A. sampling
- B. extracting
- C. deviation of sample
- D. variability of sample

ANSWER: A

267. In stem and leaf display diagrams used in exploratory analysis, leaves are considered as

- A. leading digits
- B. dispersed digits
- C. central digits
- D. trailing digits

ANSWER: A

268. Sum of highest and lowest value is 80 and coefficient of range is 0.625 then difference between highest and lowest value is

- A. 70
- B. 100
- C. 150
- D. 50

ANSWER: D

269. In a symmetrical distribution, third quartile and first quartile of data in distribution must

- A. be at equal distance
- B. not be at equal distance
- C. positive value concentration
- D. negative value concentration

ANSWER: A

270. Original tables used to represent data are considered as

- A. dispersion tables
- B. classification tables
- C. cumulative tables
- D. distributed tables

ANSWER: B

271. Standard deviation of a sampling distribution is also classified as

- A. standard error
- B. statistic error
- C. sampling error
- D. probability error

ANSWER: A

272. If classification of collected data is based on characteristics such as religion, education and caste, then this is considered as

- A. open end classification
- B. time series classification
- C. qualitative classification
- D. quantitative classification

ANSWER: C

273. In arithmetic mean, sum of deviations of all recorded observations must always be

- A. two
- B. minus one
- C. one
- D. zero

ANSWER: D

274. Distribution whose outliers are higher values is considered as

- A. variable model
- B. right skewed
- C. left skewed
- D. constant model

ANSWER: B

275. Analytical study of breakeven point and decisions related to investments in uncertain conditions is an example of

- A. statistics in personnel management
- B. statistics in finance

- C. statistics in marketing
- D. statistics in production

ANSWER: B

276. If point estimate is 8 and margin of error is 5 then confidence interval is

- A. 3 to 13
- B. 4 to 14
- C. 5 to 15
- D. 6 to 16

ANSWER: A

277. Three times of difference between mean and median is divided by standard deviation to calculate coefficient of skewness by method of

- A. Professor Keller
- B. Professor Bowley
- C. Karl Pearson
- D. Professor Kelly

ANSWER: C

278. Probability distribution of discrete random variable is classified as

- A. probability mass function
- B. posterior mass function
- C. interior mass function
- D. continuous mass function

ANSWER: A

279. Standard normal probability distribution has mean equal to 40, whereas value of random variable  $x$  is 80 and  $z$ -statistic is equal to 1.8 then standard deviation of standard normal probability distribution is

- A. 120
- B. 80
- C. 40
- D. 20

ANSWER: D

280. If a brown sack consists of 4 white balls and 3 black balls then probability of one randomly drawn ball will be white is

- A.  $4/7$
- B.  $1/7$
- C.  $4/4$
- D.  $4/3$

ANSWER: A

281. Measurement scale which allows researchers and statisticians to perform certain operations on data collected from respondents is classified as

- A. interval scale



- B. flow measuring scale
- C. validity scale
- D. reliability scale

ANSWER: A

282. Type of questions included in questionnaire to record responses in which respondent can answer in any way are classified as

- A. multiple choices
- B. itemized question
- C. open ended questions
- D. close ended questions

ANSWER: C

283. Process of arranging data on basis of certain properties in classes or groups is classified as

- A. classification of data
- B. reflection of data
- C. sample of population
- D. sample observations

ANSWER: A

284. Formula in which  $\Sigma(x-\bar{x})^2$  is divided by one less than number of observations in sample is classified as

- A. coefficient of deviation
- B. mean variance
- C. sample variance
- D. population variance

ANSWER: C

285. Difference between sample space and subset of sample space is considered as

- A. numerical complementary events
- B. equal compulsory events
- C. complementary events
- D. compulsory events

ANSWER: C

286. In measuring probability of any certain event, one which is in limit of probability represents

- A. certain event
- B. sample event
- C. impossible events
- D. possible events

ANSWER: A

287. According to beta, platykurtic distribution is one in which the

- A. beta three is greater than three
- B. beta two is greater than three

C. beta three is less than three

D. beta two is greater than two

ANSWER: C

288. Arithmetic mean is 25 and all sum of observations is 350 then number of observations are

A. 25

B. 70

C. 14

D. 75

ANSWER: C

289. Numerical or descriptive measure which is associated with variable to describe entire population of statistical phenomenon is classified as

A. mixer

B. sampler

C. parameter

D. process

ANSWER: C

290. Model which consists of management philosophy, behavioral tools and statistical methods as key steps towards improvement is considered as

A. serial improvement process model

B. behavioral improvement process model

C. quality improvement process model

D. statistics improvement process model

ANSWER: C

291. In sampling distribution, formula of calculating standard deviation of sample proportion is as

A. square root of  $pqn/p$

B. square root of  $pq/n$

C. square root of  $nq/p$

D. square root of  $pn/q$

ANSWER: B

292. Collection of all elements such as group of variables for research is classified as

A. statistical process

B. marginal error

C. data

D. population

ANSWER: D

293. Formula written as quartile deviation divided by sum of third and first quartile is used to calculate

A. coefficient of quartile deviation

B. coefficient of quartiles

- C. coefficient of inter quartiles
- D. coefficient of central tendency

ANSWER: A

294. Considering mean, mode and skewness of data, value of skewness will be positive if

- A. mean<median
- B. mean>median
- C. mean>mode
- D. mean<mode

ANSWER: C

295. Standard deviation of first 50 natural numbers is

- A. 45.43
- B. 14.43
- C. 20.43
- D. 16.43

ANSWER: B

296. In standard normal probability distribution, z-score of distribution will be zero if

- A.  $x < \mu$
- B.  $x > \mu$
- C.  $x = \mu$
- D. all of above

ANSWER: C

297. Occurrence of two events in a way that events have some connection in between is classified as

- A. compound events
- B. mutual events
- C. connected events
- D. interlinked events

ANSWER: A

298. Smallest numerical value is subtracted from largest numerical value and then divided to number of class desired to calculate

- A. simple class interval
- B. width of class interval
- C. number of classes
- D. manifold class intervals

ANSWER: B

299. To develop interval estimate of any parameter of population, value which is added or subtracted from point estimate is classified as

- A. margin of efficiency
- B. margin of consistency
- C. margin of biasedness
- D. margin of error

ANSWER: D

300. If a bag contains three fruits, 16 percent are apples, 30 percent are oranges and 20 percent some other fruit that is neither oranges nor apples then probability of selecting an orange randomly is

- A. 0.3
- B. 0.45
- C. 0.65
- D. 0.034

ANSWER: A

301. Standard deviation of population is denoted by

- A.  $\Omega$
- B.  $\omega$
- C.  $\sigma$
- D.  $\Sigma$

ANSWER: C

302. In stratified sampling, sample drawn randomly from strata is classified as

- A. sub strata
- B. sub sample
- C. direct sub group
- D. indirect sub group

ANSWER: B

303. Difference between corresponding population and unbiased estimate in terms of absolute value is classified as

- A. sampling error
- B. random sample error
- C. under coverage error
- D. coverage error

ANSWER: A

304. Method in which previously calculated probabilities are revised with new probabilities is classified as

- A. updating theorem
- B. revised theorem
- C. Bayes theorem
- D. dependency theorem

ANSWER: C

305. Type of graphical charts that allows user to make direct comparisons between various data sets are called

- A. multiple bar charts
- B. single bar charts
- C. paired charts

D. non paired data charts

ANSWER: A

306. Considering all observations of arithmetic mean, sum of squares of deviations must be less than

- A. sum of multiples of other quantity
- B. sum of deviations from other quantity
- C. sum of squares from other quantity
- D. cumulative frequency from other quantity

ANSWER: C

307. If value of  $\lambda$  is 9 and value of random variable  $x$  is 5 then value of z-score is

- A. -2.58
- B. -1.86
- C. -2.34
- D. -1.34

ANSWER: D

308. In kurtosis, frequency curve that has flatten top than normal curve of bell shaped distribution is classified as

- A. leptokurtic
- B. platykurtic
- C. mega curve
- D. mesokurtic

ANSWER: B

309. Probability of events must lie in limits of

- A. one to two
- B. two to three
- C. one to two
- D. zero to one

ANSWER: D

310. According to types of questionnaires, structured undisguised questionnaire is one in which purpose of study is

- A. non-interval respondents
- B. disclosed to respondents
- C. not disclosed to respondents
- D. none of above

ANSWER: B

311. In a set of observations, unusual lower and higher values are called

- A. outliers
- B. free liners
- C. central liners
- D. median liners

ANSWER: A

312. Characterization, collection and presentation of particular set of data in organized way is classified as

- A. descriptive statistics
- B. education statistics
- C. social statistics
- D. business statistics

ANSWER: A

313. In quartiles, central tendency median to be measured must lie in

- A. first quartile
- B. second quartile
- C. third quartile
- D. four quartile

ANSWER: B

314. Output of 20 workers in hand made pot painting store is as 55, 65, 62, 60, 74, 75, 65, 70, 70, 72, 67, 78, 79, 80, 68, 54, 56, 63, 69, 71 then coefficient of range is

- A. 0.29
- B. 0.19
- C. 0.49
- D. 0.39

ANSWER: B

315. Event such as equal chance of heads or tails while tossing coin is an example of

- A. numerical events
- B. equally likely events
- C. unequal events
- D. non-numerical events

ANSWER: B

316. Arithmetic mean is 12 and number of observations are 20 then sum of all values is

- A. 8
- B. 32
- C. 240
- D. 1.667

ANSWER: C

317. Method used to compute average or central value of collected data is considered as

- A. measures of positive variation
- B. measures of central tendency
- C. measures of negative skewness
- D. measures of negative variation

ANSWER: B

318. If arithmetic mean is 78 and coefficient of variation is 12.3% then standard deviation is

- A. 10.594
- B. 9.594
- C. 8.59
- D. 11

ANSWER: B

319. Consider a set of observations whose mean is 14 and mode of same set of observations is 12 then values of skewness around central value are

- A. 2
- B. 26
- C. 1.667
- D. 168

ANSWER: A

320. Data measurement which arises from a specific measuring process is classified as

- A. reliable data
- B. valid data
- C. continuous data
- D. discrete data

ANSWER: D

321. In a Venn diagram used to represent probabilities, occurred events are represented by

- A. circle
- B. rectangle
- C. square
- D. triangle

ANSWER: B

322. Measurement scale which allows ranking of numbers rather than arithmetic operations on data is classified as

- A. valid scale
- B. discrete scale
- C. ordinal scale

D. continuous scale

ANSWER: C

323. Formula of calculating expected value of random variable  $x$  of gamma distribution is as

A.  $E(x) = n/\mu$

B.  $E(x) = pq/\mu$

C.  $E(x) = \mu/np$

D.  $E(x) = \alpha/\mu$

ANSWER: A

324. Formula of calculating moment about means for origin or zero is

A.  $1/n \sum fx^r$

B.  $3/4 \sum fx^n$

C.  $5/7 \sum fx^r$

D.  $2/10 \sum fx^r$

ANSWER: A

325. If probability of an event depends on repetitive observations that occurs in outcomes of experiment then this is classified as

A. fixed probability

B. non-relative probability

C. empirical probability

D. relative probability

ANSWER: C

326. Mean or average used to measure central tendency is called

A. sample mean

B. arithmetic mean

C. negative mean

D. population mean

ANSWER: B

327. Value of first quartile is 23 and inter quartile range is 20 then value of third quartile is

A. 63

B. 53

C. 43

D. 73

ANSWER: C

328. If z-score of normal distribution is 2.5, mean of distribution is 45 and standard deviation of normal distribution is 3 then value of  $x$  for a normal distribution is

A. 97.5

B. 47.5

C. 37.5

D. 67.5



ANSWER: C

329. Scale used in statistics which provides difference of proportions as well as magnitude of differences is considered as

- A. satisfactory scale
- B. ratio scale
- C. goodness scale
- D. exponential scale

ANSWER: B

330. Type of table in which study variables provides large number of information with interrelated characteristics is classified as

- A. lower order table
- B. manifold table
- C. higher order table
- D. both b and c

ANSWER: D

331. Measurement of inequality in wealth and income distribution is measured with help of

- A. measurement of bimodaling
- B. measurement of outliers
- C. measurement of uniformity
- D. measurement of variability

ANSWER: D

332. If  $\mu$  is equal to 25 then value of mean for exponential probability distribution is

- A. 0.4
- B. 0.08
- C. 0.07
- D. 0.04

ANSWER: D

333. Measure of chance of an uncertain event in form of numerical figures is classified as

- A. probability
- B. variability
- C. durability
- D. likelihood

ANSWER: A

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334. Sum of squared deviation of sample mean is 48 and total number of observation is 13 then population variance is

- A. 61
- B. 48
- C. 13

D. 4

ANSWER: D

335. Sum of observations is 12 and coefficient of absolute mean deviation is 18 then value of mean absolute deviation is

A. 516

B. 716

C. 216

D. 616

ANSWER: C

336. Table in which data represented is extracted from some other data table is classified as

A. classification tables

B. cumulative tables

C. derived table

D. dispersion tables

ANSWER: C

337. Discrete probability distribution in which outcome is very small with a very small period of time is classified as

A. posterior distribution

B. cumulative distribution

C. normal distribution

D. Poisson distribution

ANSWER: D

338. Method of calculating coefficient of skewness by Karl Pearson method is useful for type of distributions that are

A. non concentrated

B. open ended

C. close ended

D. concentrated

ANSWER: B

339. Mode of set of 20 observations is 18 and skewness of observations around central value is 5 then calculated value of arithmetic mean of observations is

A. 23

B. 7

C. 13

D. 43

ANSWER: A

340. If mean of percentages, rates and ratios is to be calculated then central tendency measure which must be used in this situation is

- A. weighted arithmetic mean
- B. paired arithmetic mean
- C. non-paired arithmetic mean
- D. square of arithmetic mean

ANSWER: A

341. Shape of frequency distribution constructed in consideration of empirical rule is classified as

- A. bell shaped
- B. tower shape
- C. wing shape
- D. fish shape

ANSWER: A

342. In confidence interval estimation, confidence efficient is denoted by

- A.  $1 + \beta$
- B.  $1 - \beta$
- C.  $1 - \alpha$
- D.  $1 + \alpha$

ANSWER: C

343. Considering sample size, sampling distribution standard error decreases when the

- A. size of sample increases
- B. size of sample decreases
- C. margin of error increases
- D. margin of error decreases

ANSWER: A

344. At a grocery store, number of per day sold processed fruits cans in 15 days are 50, 70, 60, 40, 30, 20, 5, 150, 55, 75, 65, 45, 35, 25, 52 then outliers in observations are

- A. 50, 150
- B. 5, 150
- C. 25, 70
- D. 150

ANSWER: B

345. Considering normal distribution, spread is increased and height of curve is decreased for the

- A. smaller value of variance
- B. larger value of variance
- C. larger value of standard deviation

D. smaller value of standard deviation

ANSWER: C

346. According to empirical rule, mean and standard deviation interval that covers approximately 95.45% of data from a frequency distribution is

A.  $\mu \pm \sigma$

B.  $2\mu \pm 2\sigma$

C.  $3\mu \pm 2\sigma$

D.  $\mu \pm 2\sigma$

ANSWER: D

347. Measures whose calculated values represents only some proportion of frequency distribution are classified as

A. measures of deciles systems

B. measures of momentum system

C. measures of percentile system

D. measures of moment system

ANSWER: C

348. If each value of frequency distribution is divided by total number of recorded observations in distribution then resultant value is called

A. interval frequency distribution

B. percentage frequency distribution

C. nominal frequency distribution

D. ordinal frequency distribution

ANSWER: B

349. When data is arranged, middle value in set of observations is classified as

A. median

B. mean

C. variance

D. standard deviation

ANSWER: A

350. If frequencies widely varies between different classes, then measure of central tendency must be used is

A. non-paired arithmetic mean

B. square of arithmetic mean

C. weighted arithmetic mean

D. paired arithmetic mean

ANSWER: C

351. Output of 15 workers in hand made leather shoes company is as 50, 65, 70, 55, 62, 74, 75, 65, 70, 78, 79, 80, 68, 72, 67 then range is

A. 30

- B. 80
- C. 75
- D. 79

ANSWER: A

352. Measure of central tendency which represents over time multiplicative effects for inflation and compound interest is considered as

- A. deviation square mean
- B. paired mean
- C. geometric mean
- D. harmonic mean

ANSWER: C

353. Around central value of observations, extent to which values depart from normal distribution is classified as

- A. negative variation
- B. positive variation
- C. skewness
- D. positive trailing

ANSWER: C

354. Measurement scale in which values are categorized to represent qualitative differences and ranked in meaningful manner is classified as

- A. valid scale
- B. discrete scale
- C. ordinal scale
- D. continuous scale

ANSWER: C

355. If scatter or dispersion in distribution is high on each side then this indicates

- A. outliers of data
- B. low uniformity of data
- C. high uniformity of data
- D. dispersion of data

ANSWER: B

356. Method in which sample statistic is used to estimate value of parameters of population is classified as

- A. estimation
- B. valuation
- C. probability calculation
- D. limited theorem estimation

ANSWER: A

357. Considering mean, mode and skewness of data, value of skewness will be negative if
- A. mean > mode
  - B. mean < mode
  - C. mean < median
  - D. mean > median

ANSWER: B

358. Measurement scale which allows determination of differences in intervals is classified as

- A. interval scale
- B. flow measuring scale
- C. validity scale
- D. reliability scale

ANSWER: A

359. Important principles to determine valid statistical inference must includes

- A. principle of sampling error
- B. principle of statistical regularity
- C. principle of inertia
- D. both b and c

ANSWER: D

360. Distribution which consists of all values of sample statistic of sampling is classified as

- A. statistic distribution
- B. sampling distribution
- C. possibility distribution
- D. valuable distribution

ANSWER: B

361. Record of daily shipment is 34, 35, 41, 30, 55, 45, 30, 34, 32, 52, 42, 40, 60, 36, 38, 48, 56, 53, 34, 33, 32, 41, 55, 59, 34, 51, 54, 53, 36, then range of values to calculate class interval is

- A. 90
- B. 30
- C. 2
- D. 1800

ANSWER: B

362. If number of trials are 8 and probability of success are 0.65 then mean of negative probability distribution is

- A. 8.65
- B. 12.31
- C. 5.2
- D. 7.35

ANSWER: B

363. Technique used in measures of variations to show direction of variation in set of observations is classified as

- A. measures of dispersion
- B. measures of statistics
- C. measures of skewness
- D. measures of process

ANSWER: C

364. Product W has per unit contribution of 8 with sold quantity of 124 units, product X has per unit contribution of 5 with sold quantity of 105 units, product Y has per unit contribution of 9 with sold quantity of 135 units, product Z has per unit contribution of 12 with sold quantity of 140 units then weighted average mean is

- A. \$11.75
- B. \$10.75
- C. \$9.75
- D. \$8.75D

ANSWER:D

365. Use of statistics in analysis of sales territories, advertising strategies and routing of sales personnel are classified as uses of

- A. statistics in personnel management
- B. statistics in finance
- C. statistics in marketing
- D. statistics in production

ANSWER: C

366. Total revenue (in crores) of five leather goods companies are as two companies have revenues between 10-20, one company has revenue between 20-30 and one company has revenue between 30-40 then standard deviation is

- A. 7.9
- B. 4.9
- C. 5.9
- D. 6.9

ANSWER: B

367. Types of structured questions does not include

- A. nominal questions

- B. interval questions
- C. ratio questions
- D. non-disguised questions

ANSWER: D

368. For mutually exclusive events, formula of calculating probability as  $n(A)/n(S) + n(B)/n(S)$  is used for

- A. rule of marginal count
- B. rule of comparison
- C. rule of addition
- D. rule of division

ANSWER: C

#### Measurements in Statistics Quiz

369. In measure of central tendency, population parameter is denoted by

- A. Greek letter  $\mu$
- B. roman letter  $\mu$
- C. Athens letter  $\mu$
- D. roman letter  $x^-$

ANSWER: A

370. In kurtosis, beta is less than three and median is preferred as central tendency for

- A. leptokurtic distribution
- B. platykurtic distribution
- C. mesokurtic distribution
- D. mega curve distribution

ANSWER: A

371. Class of variable which can accept only values from set of integers is classified as

- A. discrete random variable
- B. continuous random variable
- C. posterior random variable
- D. interior random variable

ANSWER: A

372. If total number of elements with some specific characteristics is 18 from a population of 40 and sample is drawn without replacement with size of 4 then mean of hyper geometric probability distribution is

- A. 4.8
- B. 1.8
- C. 2.8
- D. 3.8

ANSWER: B

373. If rate of occurrences in Poisson probability distribution is smaller and occurrences have large numbers then distribution tends to be



- A. negatively skewed and mesokurtic
- B. positively skewed and mesokurtic
- C. symmetrical and leptokurtic
- D. symmetrical and mesokurtic

ANSWER: D

374. In classes of grouped data such as 10-15, 16-20, 21-25, 26-30 with respective frequencies of each class as 3, 5, 4, 3 then range is

- A. 5
- B. 6
- C. 15
- D. 20

ANSWER: B

375. Measures which considers mean or median to calculate average deviation does not includes

- A. mean absolute deviation
- B. standard deviation
- C. variance
- D. median deviation

ANSWER: D

376. Per day wage of 15 employees of different departments is as 620, 640, 750, 850, 650, 720, 730, 785, 630, 740, 900, 880, 780, 690, 850 then value of  $\bar{x}$  is

- A. 647.67
- B. 947.67
- C. 847.67
- D. 747.67

ANSWER: D

377. Distribution of difference of proportions approximate normal standard distribution only if

- A.  $n > \text{or} = 30$
- B.  $n < \text{or} = 30$
- C.  $n > \text{or} = 50$
- D.  $n < \text{or} = 50$

ANSWER: A

378. First quartile of data set is 12, third quartile of data set is 18 and median is 9 then absolute skewness of same data set is

- A. 18
- B. 12

- C. 9
- D. 15

ANSWER: B

379. In response questionnaires, questions which requires reflections from respondents side are called

- A. reflection questions
- B. responsive questions
- C. opinion questions
- D. reliability questions

ANSWER: C

380. Selling price of product is subtracted from purchasing price of product to calculate

- A. profit of product
- B. loss of profit
- C. cumulative average
- D. weighted average

ANSWER: A

381. If number of outcomes in collection are 5 and distinct outcomes are 9 then count value according to combinations method is

- A. 4
- B. 9
- C. 126
- D. 45

ANSWER: C

382. Number of observations are 24 and value of  $\bar{x}$  is 28 then sum of all values is

- A. -4
- B. 40000%
- C. 52
- D. 672

ANSWER: D

383. Process in which trials are statistically independent and each trial of event has only two outcomes is classified as

- A. Bernoulli process
- B. Bayes process
- C. functional process
- D. independent limited process

ANSWER: A

384. 90th percentile is 60, 50th percentile is 30 and 10th percentile is 40 then coefficient of skewness is

- A.  $\pm 30$
- B.  $\pm 2$
- C.  $\pm 8$
- D.  $\pm 4$

ANSWER: B

385. Science and art which is used to present, analyze and interpret collected observations is classified as

- A. serial analysis
- B. statistics
- C. management
- D. accounting

ANSWER: B

386. Service time (in minutes) at airport ticket counter is as 4.5, 5.5, 6, 7, 8, 8.5, 4, 3, 3.5, 2.5, 3.8 then median of data is

- A. 3.8
- B. 4.5
- C. 4
- D. 4.75

ANSWER: D

387. In an hospital in Boston (USA), number of heart patients who visited cardiologist in 17 days are 11, 12, 15, 18, 17, 12, 14, 15, 16, 17, 18, 13, 19, 14, 18, 13, 20

- A. 15
- B. 14
- C. 16
- D. 15.5

ANSWER: A

388. In probability theories, collection of all events possible outcomes from an experiment is classified as

- A. mutually exclusive events
- B. collectively exhaustive events
- C. collectively exclusive events
- D. mutually exhaustive events

ANSWER: B

389. Variability measuring tool in which standard deviation is divided by arithmetic mean and multiplied by 100 is classified as

- A. coefficient of variation

- B. coefficient of standard deviation
- C. coefficient of deviation
- D. coefficient of mean

ANSWER: A

390. If chances of success in a distribution are 0.68 and number of values in distribution are 4 then mean of Poisson probability distribution is

- A. 3.72
- B. 1.72
- C. 2.72
- D. 4.72

ANSWER: C

391. Marks of Cambridge university students in mathematics test out of 20 are 18, 17, 16, 15, 14, 17, 16, 14, 13, 12, 12, 11, 14, 19, 18

- A. 14
- B. 14.5
- C. 15
- D. 13

ANSWER: C

392. Largest numerical value is 85 and smallest numerical value is 65 and classes desired are 8 then width of class interval is

- A. 18.75
- B. 14.75
- C. 13.75
- D. 2.5

ANSWER: D

393. If trial is repeated 6 times and chances of success for desired outcome is 0.75 then variance for negative probability distribution is

- A. 4.67
- B. 2.67
- C. 3.67
- D. 5.67

ANSWER: B

394. Use of statistics in analysis of time when to order and quantity required for in sourcing or outsourcing of materials is an example of usage of

- A. statistics in marketing
- B. statistics in production
- C. statistics in personnel management

D. statistics in finance

ANSWER: B

395. Considering set of values, percentage of values that lies within three standard deviation of population plus population mean is

A. 88.90%

B. 78.90%

C. 68.90%

D. 98.90%

ANSWER: A

396. Difference between smallest observation in data set and largest observation in data set is classified as

A. positive uniformity

B. negative uniformity

C. range

D. average

ANSWER: C

397. Type of central tendency measures which divides data set into 100 equal parts is classified as

A. quartiles

B. deciles

C. percentiles

D. multiple pile of data

ANSWER: C

398. Approach in probability in which all outcomes from an experiment are equally likely to occur or are mutually exclusive is called

A. durable approach

B. permanent approach

C. temporary approach

D. classical approach

ANSWER: D

399. Sample stability and ability to be easily understandable are requirements to measure

A. positive tendency

B. population tendency

C. central tendency

D. sample tendency

ANSWER: C

400. In confidence interval estimation, interval estimate is also classified as

- A. confidence efficient
- B. confidence deviation
- C. confidence mean
- D. marginal coefficient

ANSWER: A

401. When statistical inference is made on basis of sample results about characteristics of population then this is classified as

- A. inferential statistics
- B. sample statistics
- C. population statistics
- D. population variability

ANSWER: B

402. Considering standard deviation, quartile deviation is equal to

- A.  $\frac{3}{2} \sigma$
- B.  $\frac{2}{3} \sigma$
- C.  $2\frac{1}{3} \sigma$
- D.  $4\frac{1}{3} \sigma$

ANSWER: B

403. In graphical representation of data, ideographs are also called as

- A. picto-graph
- B. pictograms
- C. symmetry graph
- D. asymmetry graphs

ANSWER: B

404. For a given set of number of customers who visit a shoes shop in 5 consecutive days, mean absolute deviation is 10 then standard deviation of data set is

- A. 2
- B. 10
- C. 12.5
- D. 50

ANSWER: C

405. Type of sampling in which desired and useful information is gathered from best position holder is classified as

- A. quota sampling
- B. convenience sampling
- C. purposive sampling
- D. judgment sampling

ANSWER: D

406. Considering alpha and beta in moments, measure of asymmetrical distribution is possible with

- A. alpha three and beta one
- B. alpha two and beta one
- C. alpha three and beta four
- D. alpha three and beta two

ANSWER: A

407. Mean absolute deviation which is used as relative measure is called

- A. coefficient of quartile range deviation
- B. coefficient of mean absolute deviation
- C. coefficient of mean deviation
- D. coefficient of absolute quartile deviation

ANSWER: B

408. In normal distribution, z-score and z-statistic are classified as names of

- A. standardized normal random variable
- B. Poisson random variable
- C. normal geometric variable
- D. weighted average variable

ANSWER: A

409. Distribution whose mode is not well defined and classes of distribution are open ended uses coefficient of skewness by

- A. Karl Pearson
- B. Professor Kelly
- C. Professor Keller
- D. Professor Bowley

ANSWER: D

410. Distribution in which values of median, mean and mode are not equal is considered as

- A. experimental distribution
- B. asymmetrical distribution
- C. symmetrical distribution
- D. exploratory distribution

ANSWER: B

411. Events in which some points of sample are common are considered as

- A. divisional events
- B. overlapping events
- C. common events

D. additive events

ANSWER: B

412. If value of failure in binomial probability distribution is 0.70 and success is 0.30 and number of values in distribution are 7 then moment coefficient of kurtosis is

A. 0.51

B. 0.18

C. 0.28

D. 0.48

ANSWER: B

413. If median is 18, coefficient of skewness is 6 and mean is 30 then standard deviation of data is

A. 6

B. 18

C. 30

D. 36

ANSWER: A

414. Branch of statistics which deals with findings of solution in field of medicine, education and economics is classified as

A. economic statistics

B. applied statistics

C. mathematical statistics

D. industry statistics

ANSWER: B

415. Type of questions for questionnaire includes

A. multiple choices

B. open ended

C. dichotomous

D. All of the mentioned

ANSWER: D

416. If sample size is greater than or equal to 30 then sample standard deviation can be approximated to population standard deviation for the

A. known standard deviation

B. unknown standard deviation

C. standard interval deviation

D. population interval theorem

ANSWER: B



417. Measurement of how well particular concept and technique measures variables is classified as

- A. reliability
- B. validity
- C. continuity of variables
- D. goodness of variables

ANSWER: A

418. If value of three measures of central tendencies median, mean and mode then distribution is considered as

- A. negatively skewed modal
- B. triangular model
- C. unimodel
- D. bimodel

ANSWER: C

419. Binomial probability distribution is classified as symmetric if

- A. value of  $p$  and  $q$  is equal
- B. value of  $p$  is greater than  $q$
- C. value of  $p$  is smaller than  $q$
- D. all of above

ANSWER: A

420. Value of any sample statistic which is used to estimate parameters of population is classified as

- A. point estimate
- B. population estimate
- C. sample estimate
- D. parameter estimate

ANSWER: A

421. In statistics, distance or dispersion from central value is classified as

- A. standard variance
- B. sample variance
- C. standard root
- D. standard deviation

ANSWER: D

422. Type of distribution which is useful when occurrences of events are constant is classified as

- A. open frequency distribution
- B. class frequency distribution

- C. rectangular distribution
  - D. square distribution
- ANSWER: C

423. Average deviation measures and distance measures are classified as measures of dispersion on basis of

- A. relative processing
- B. information compiled
- C. data available
- D. method employed

ANSWER: D

424. Data measurement which arises from a specific process of counting is classified as

- A. continuous data
- B. discrete data
- C. reliable data
- D. valid data

ANSWER: B

425. Distance between true value of population parameter and estimated value of population parameter is called

- A. error of central limit
- B. error of confidence interval
- C. error of estimation
- D. error of hypothesis testing

ANSWER: C

426. Structured undisguised questionnaire is one in which purpose of study is

- A. not disclosed to respondents
- B. disclosed to respondents
- C. interval respondents
- D. ratio respondents

ANSWER: B

427. Number of emergency cases in hospital for five days are as 12, 15, 18, 16, 14 then variance of sample is

- A. 5
- B. 20
- C. 4
- D. 15

ANSWER: A

428. Stem and leaf displaying technique is used to present data in

- A. descriptive data analysis
- B. exploratory data analysis
- C. nominal data analysis
- D. ordinal data analysis

ANSWER: B

429. According to empirical rule, standard deviation and mean interval that covers approximately 68.27% of data from a frequency distribution is

- A.  $\mu \pm \sigma$
- B.  $2\mu \pm 2\sigma$
- C.  $3\mu \pm 2\sigma$
- D.  $4\mu \pm 4\sigma$

ANSWER: A

430. Type of sampling in which each element of population has equally likely chance of occurrence in a random sample is classified as

- A. regular and irregular sampling
- B. error free sampling
- C. inertia sampling
- D. simple random sampling

ANSWER: A

431. Probability of failure in binomial distribution is denoted by

- A.  $p = q + 1$
- B.  $p = q - 1$
- C.  $q = 1 + p$
- D.  $q = 1 - p$

ANSWER: D

432. If a coin is tossed one time then probability of occurrence of heads is

- A.  $\frac{1}{2}$
- B.  $\frac{1}{1}$
- C.  $\frac{2}{1}$
- D.  $\frac{2}{2}$

ANSWER: A

433. Reports published by International Labor Organization and International Monetary Fund are considered as

- A. external primary data sources
- B. internal primary data sources

- C. external secondary data sources
- D. internal secondary data sources

ANSWER: C

434. If central tendency is found by using sample data from population then this is classified as

- A. tendency statistic
- B. average statistic
- C. sample statistic
- D. population statistic

ANSWER: C

435. Considering sample rather than population, standard deviation is thus denoted by

- A. small s
- B. capital s
- C.  $\Omega$
- D.  $\sigma$

ANSWER: A

436. If p is equal to 0.65, value of N is 25000 whereas sample size is 50 then value of standard deviation of sample proportion is

- A. 0.0056
- B. 0.0045
- C. 0.0065
- D. 0.045

ANSWER: B

437. Subset of selected population is called

- A. descriptive portion
- B. elementary portion
- C. inferential portion
- D. sample

ANSWER: D

438. Inter quartile range and coefficients of range are two categories of

- A. average deviation measures
- B. availability measures
- C. average measures
- D. distance measures

ANSWER: D

439. Value of  $\Sigma fd$  is 165,  $A = 25$ , and width of class interval is 10, arithmetic mean is 145 then number of observations are

- A. 35
- B. 36
- C. 34
- D. 32

ANSWER: B

440. Knowledge of possible errors, point estimate and degree of confidence is classified as

- A. interval estimation
- B. confidence interval
- C. hypothesis testing
- D. both a and b

ANSWER: D

441. In sample distribution, degree of freedom is calculated as

- A.  $df = n - 2$
- B.  $df = n - 1$
- C.  $df = n - 3$
- D.  $df = n - 5$

ANSWER: B

442. Class interval classification method which ensures data continuity is classified as

- A. midpoint method
- B. ratio method
- C. exclusive method
- D. inclusive method

ANSWER: C

443. Analysis based on study of price fluctuations, production of commodities and deposits in banks is classified as

- A. sample series analysis
- B. time series analysis
- C. numerical analysis
- D. experimental analysis

ANSWER: B

444. Bias which occurs when randomly drawn sample from population fails to represent whole population is classified as

- A. populated bias
- B. random sample bias
- C. under coverage bias
- D. coverage bias

ANSWER: C

445. Marks of 20 students out of 15 in class test are as 10, 11, 12, 12.5, 13.5, 14, 10, 11, 12, 12.5, 13.5, 14, 8, 9, 9, 8, 10, 11, 11.5, 12.5 then average marks of class is

- A. 12.25
- B. 11.25
- C. 13.25
- D. 14.25

ANSWER: B

446.  $\frac{\sum wx}{\sum w}$  divided by  $\sum w$  is used to calculate

- A. weighted arithmetic mean
- B. paired arithmetic mean
- C. non-paired arithmetic mean
- D. square of arithmetic mean

ANSWER: A

447. Variance of binomial probability distribution is larger in value if

- A.  $q$  is greater than 0.5
- B.  $p$  and  $q$  are equal
- C.  $p$  and  $q$  are greater than 0.5
- D.  $p$  is greater than 0.5

ANSWER: B

448. Product A has per unit contribution of 6 with sold quantity of 120 units, product B has per unit contribution of 8 with sold quantity of 100 units and product C has per unit contribution of 10 with sold quantity of 130 units then weighted average mean is

- A. \$7.06
- B. \$8.06
- C. \$9.06
- D. \$10.06

ANSWER: B

449. If a luggage bag contains two types of shirts, 40 percent are dress shirts, 45 percent are T-shirts and 30 percent are blue jeans then probability of selecting a dress shirt in random sample is

- A. 0.47
- B. 0.4
- C. 0.35
- D. 0.3

ANSWER: B

450. If random samples are drawn without replacement and population from which samples are drawn is infinite then method which is not applicable is

- A. weighted error probability distribution
- B. hyper geometric probability distribution
- C. Bernoulli probability distribution
- D. asymmetrical random distribution

ANSWER: B

451. If first quartile and third quartile are as 20 and 18 respectively with median of 12 then distribution is skewed to

- A. close end tail
- B. open end tail
- C. lower tail
- D. upper tail

ANSWER: D

452. First step in constructing frequency distribution is to

- A. select appropriate class intervals
- B. determine class intervals
- C. determine class limits
- D. determine midpoints of classes

ANSWER: A

453. Considering moments in standard units, third alpha with power 2 is equivalent to

- A. beta two
- B. beta one
- C. beta three
- D. beta four

ANSWER: B

454. Distribution which requires inclusion of open ended classes is considered as

- A. inclusive distribution
- B. midpoint distribution
- C. close ended distribution
- D. open ended distribution

ANSWER: D

455. Degree or extent to which frequency of observations in data set are concentrated in given frequency distribution is classified as

- A. alpha system
- B. gamma system
- C. beta system
- D. kurtosis

ANSWER: D

456. Conditional probability of two independent events Y and Z can be written as

- A.  $P(Y - Z)$
- B.  $P(Y * Z)$
- C.  $P(Y|Z)$
- D.  $P(Y + Z)$

ANSWER: C

457. Scale which is used in determination of categorical information is called

- A. discrete scale
- B. continuous scale
- C. valid scale
- D. nominal scale

ANSWER: D

458. Value which is used to measure distance between mean and random variable x in terms of standard deviation is called

- A. z-value
- B. variance
- C. probability of x
- D. density function of x

ANSWER: A

459. Type of central tendency measures which divides data set into four equal parts is

- A. quartiles
- B. deciles
- C. percentiles
- D. multiple pile of data

ANSWER: A

460. Measure of variation which is useful in large deviations occurrences on occasional basis is considered as

- A. mean absolute deviation
- B. standard deviation
- C. Variance
- D. Median deviation

ANSWER: A

461. According to notations used by R.A. Fisher, value of beta one with square root is equivalent to

- A. gamma four
- B. gamma one
- C. gamma two
- D. gamma three

ANSWER: B



462. Type of probability distribution whose standard deviation is one and mean is equal to zero is classified as

- A. weighted probabilities distribution
- B. standard normal probability distribution
- C. normal cumulative probability distribution
- D. approximated normal distribution

ANSWER: B

463. Frequency distribution is considered as positively skewed if all values of distribution moves to

- A. variance tail
- B. upper tail
- C. lower tail
- D. median tail

ANSWER: B

464. Collection of observations for all variables related to some research or findings is classified as

- A. data
- B. population
- C. statistical process
- D. mesokurtic

ANSWER: A

465. Symbol  $\lambda$  is used to represent

- A. variance of Poisson distribution
- B. standard deviation in Poisson distribution
- C. mean in Poisson distribution
- D. mean in cumulative distribution

ANSWER: C

466. Formula of variance of uniform or rectangular distribution is as

- A.  $(b - a)^2/6$
- B.  $(b + a)^2/12$
- C.  $(b - a)^3/8$
- D.  $(b + a)^2/2$

ANSWER: B

467. For quality improvements, philosophy which acts like a guide and provides solid foundation is classified as

- A. management philosophy
- B. statistical philosophy

- C. serial philosophy
- D. parallel philosophy

ANSWER: A

468. In confidence interval estimation, formula of calculating confidence interval is

- A. point estimate \* margin of error
- B. point estimate  $\pm$  margin of error
- C. point estimate - margin of error
- D. point estimate + margin of error

ANSWER: B

469. Curve of cumulative frequency is also known as

- A. Ogive
- B. A-give
- C. C-give
- D. B-give

ANSWER: A

470. Difference between value of parameter of population and value of unbiased estimator point is classified as

- A. sampling error
- B. marginal error
- C. confidence error
- D. population error

ANSWER: A

471. Probability distribution having shape of bell and in which values of mean lies in center of probability distribution is classified as

- A. continuous distribution
- B. normal distribution
- C. discrete distribution
- D. hyper geometric distribution

ANSWER: B

472. If proportion of population is 10.5 then proportion mean of sampling distribution is

- A. 10.5
- B. 12.5
- C. 15.5
- D. 18.5

ANSWER: A

473. If critical value of normal standard variable is 0.95 and standard error of specific statistic 3.5 then margin of error is

- A. 2.325
- B. 3.325
- C. 4.325
- D. 5.325

ANSWER: B

474. If value of mode is 14 and value of arithmetic mean is 5 then value of median is

- A. 12
- B. 18
- C. 8
- D. 14

ANSWER: C

475. Probability of event A that does not occur in experiment is equal to

- A.  $1 - P(A)$
- B.  $1 + P(A)$
- C.  $1 \times P(A)$
- D.  $2 - P(A)$

ANSWER: A

476. Method of counting outcomes in which number of outcomes are determined without prior listing is classified as

- A. single experiments
- B. multiple experiments
- C. zero experiments
- D. unlisted experiments

ANSWER: B

477. If in an experiment A and B are two events, then occurrence of event B or event A or occurrence of both is represented by

- A.  $A - B$
- B. A union B
- C. A intersection B
- D.  $A + B$

ANSWER: B

478. Percentile and moment system are two groups of

- A. skewness measures
- B. central tendencies measures
- C. quartile measures
- D. percentile measures

ANSWER: B

479. Considering events Y and Z, non-occurrence of event Z and occurrence of event Y is represented by

- A.  $\bar{Y}$  union Z
- B. Y union  $\bar{Z}$
- C.  $\bar{Y}$  intersection Z
- D. Y intersection  $\bar{Z}$

ANSWER: D

480. Properties such as variation, central tendency and shape of distribution of frequency are basis to extract information from

- A. extended measures
- B. skewed measure
- C. ordinal measures
- D. descriptive measures

ANSWER: D

481. Numerical value which shows tendency around central value of cluster is classified as

- A. central tendency
- B. cluster tendency
- C. group tendency
- D. numerical tendency

ANSWER: A

482. Quartile deviation for number of X-ray patients who visits orthopedic in 7 consecutive days is 14 then mean absolute deviation is

- A. 18.8
- B. 15.8
- C. 10.8
- D. 16.8

ANSWER: D

483. In kurtosis, frequency curve which is also classified as normal curve is called

- A. mega curve
- B. mesokurtic
- C. leptokurtic
- D. platykurtic

ANSWER: B

484. Formula of calculating variance for negative binomial distribution is

- A.  $rq/p^2$
- B.  $pq/r^2$
- C.  $rp/q^2$
- D.  $rq/p$

ANSWER: A

485. In normal distribution, normal curve becomes more wider and more flatter because of

- A. small value of variance
- B. large value of variance
- C. large value of standard deviation
- D. small value of standard deviation

ANSWER: C

486. Binomial probability distribution is classified as skewed to left if

- A.  $p > 0.5$
- B.  $q > 0.5$
- C.  $p < 0.5$
- D.  $q < 0.5$

ANSWER: A

487. Previous probabilities in Bayes Theorem that are changed with help of new available information are classified as

- A. independent probabilities
- B. posterior probabilities
- C. interior probabilities
- D. dependent probabilities

ANSWER: B

488. If  $\mu$  is equal to 4 then variance of exponential probability distribution is

- A. 0.0625
- B. 0.085
- C. 0.0925
- D. 0.0725

ANSWER: A

489. Conditional probability of two events Y and Z written as  $P(Z|Y) = P(Y \text{ and } Z)/P(A)$  shows that events are

- A. statistically dependent events
- B. descriptive unaffected events
- C. statistically independent events
- D. statistically unaffected events

ANSWER: A

490. As compared to measures of variation, measure of skewness is used to understand concentration of

- A. values around mean
- B. upper tail only
- C. lower tail only
- D. median coefficients

ANSWER: A

491. If parameter  $\mu$  is 11 and n of gamma distribution is 50 then variance of gamma distribution is

- A. 0.713
- B. 0.613
- C. 0.513
- D. 0.413

ANSWER: D

492. Value of estimator is subtracted from mean and then divided by standard deviation to calculate

- A. random variable with standard error
- B. sample size of population
- C. standard normal random variable
- D. error free random variable

ANSWER: C

493. If midpoints of bars on charts are marked and marked dots are joined by a straight line then this graph is classified as

- A. class interval polygon
- B. paired polygon
- C. marked polygon
- D. frequency polygon

ANSWER: D

494. Statistical method which facilitate decision making process for population sample results is classified as

- A. decisional procedure
- B. inferential statistics
- C. elementary statistics
- D. social methodology

ANSWER: B

495. For Gamma distribution, if value of n is equal to 15 and value of  $\mu$  is 7 then expected value for this distribution is

- A. 3.14
- B. 2.14
- C. 4.14
- D. 5.14

ANSWER: B

496. Concept used in calculation of index numbers and where smaller observations must be taken into consideration is called

- A. deviation square mean
- B. paired mean
- C. geometric mean
- D. harmonic mean

ANSWER: C

497. If in an experiment A and B are two events, then occurrence of event A or B simultaneously is represented by

- A. A intersection B
- B.  $A + B$
- C.  $A - B$
- D. A union B

ANSWER: A

498. If number of outcomes in collection are 2 and distinct outcomes are 4 then count value according to permutations is

- A. 2
- B. 12
- C. 24
- D. 4

ANSWER: C

499. In moments, alphas whose values depends on shape of frequency curve are

- A. alpha one and two
- B. alpha one and two
- C. alpha three and four
- D. alpha one and four

ANSWER: C

500. In statistical analysis, sample size is considered small if

- A.  $n > 50$
- B.  $n < 50$
- C.  $n > 30$
- D.  $n < 30$

ANSWER: D

501. 'less than type' cumulative frequency distribution is considered as correspondent to

- A. upper limit of class intervals
- B. lower limit of class intervals
- C. upper limit of range
- D. lower limit of range

ANSWER: A

502. Numbers or values that are considered independent of measurement units are called

- A. coefficient
- B. uniformity
- C. variation
- D. exploration

ANSWER: A

503. If first quartile is subtracted from median then answer must be equal to

- A. third quartile minus median
- B. third quartile plus median
- C. first quartile plus median
- D. median multiply third quartile

ANSWER: A

504. Distribution which has outliers with relatively lower values is considered as

- A. experimentally skewed
- B. exploratory skewed
- C. positively skewed
- D. negatively skewed

ANSWER: D

505. Calculation of average which is calculated by pooling data together from different data sets is classified as

- A. geometric mean
- B. harmonic mean
- C. deviation square mean
- D. paired mean

ANSWER: A