Biostatistics - final

دفعة رَوُح

Collected by

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1) which of the following is not a source of secondary data?

A) vital events registeration

B) hospital records

C) online questionnaire

D) disease registeration

E) environmental health

Answer: c

2) One of the following is not a method used to collect primary data:

A) Interviews

B) Questionaires

C) Surveys

D) Experimentations

E) census

Answer:e

3) odds ratio for bladder cancer and smoking is 2.4, this means:

A) odds exposure of controls is 2.4 times more than odds of exposure of cases

B) people with bladder cancer are 2.4 times more likely to be smokers

C) smokers have 2.4% more risk of bladder cancer than non-smokers

D) smokers have 24 times more risk than non-smokers

E) smoking is a protective factor for bladder cancer

Answer:B

4) the false statement about case control study is:

A) can be used for rare outcome

B) can be used for multiple exposures with one outcome

C) exposure is retrospective

D) usually used for rare exposure

E) the sample must contain all cases in population

Answer: D

5) which of the folliwing is halse about cross-sectional study?

A) disease etiology cannot be studied

B) no follow up

C) give prevalence of disease

D) is taken in one time frame

E) unit of analysis is the group

Answer: E

6) No. Of fingers in population :

a-   Constant

b-   Discrete

c-   Continuous

d-   Nominal

e-   Ordinal

Answer:A

7) +Reject the null while it is false?

a. A correct decision

b. None of the above is correct

c. Type II Error (Beta Error)

d. Type I error (Alpha Error)

e. Power of the study

Answer:A

8) Reject the null while it is true?

a. None of the above is correct

b. Type II Error (Beta Error)

c. Type I error (Alpha Error)

d. A correct decision

e. Power of the study

Answer:C

9) One statement is not correct regarding the chi-square validity?

a. None of the expected numbers should be less than 1

b. if the overall total is less than 40 all the expected values should be at least 5

c. No cell zero d. less than 20% of expected numbers be less than 1

e. The total number should be more than 40

Answer: D

10) The mode is?

a. The values that occurs most often in a set of data

b. The difference between the largest and the smallest value of observations.

c. It is the sum of all observation divided by number of observations

d. It is the middle value in an ordered array data

e. It is the middle value in a set of data

11) In one city five white children and seven black children are bitten by rats. The white children are aging 3, 6, 4, 5, and 3 years. The black children are aging 4, 2, 5, 3, 2, 4, and 1 years. Based on this information, it can be determined that?

a. The range of ages for the black children is twice for the white children.

b. The range of ages for the black and white children cannot be compared

c. The range of ages for the black children is greater than that for the white children.

d. The range of ages for the black is smaller than that for the white children.

e. The range of ages for the black children equals that for the white children.

12) Which of the following is a non-probability sample?

a. Systematic sample

b. cluster sample

c. Stratified random sample

d. Simple random sample

e. Convenient sample

13) In two tailed t-test at a = 0.01, and total subjects = 29. The critical t value is?

a. 2.76

b. 1.70

c. 3.46

d. 1.96

e. 2.05

14) The Z-score corresponding to the 89th percentile is?

a. 2.44

b. 0.48

c.1.23

d. 1.05

e. 0.88

15) Which of the following is a necessary condition for a sample to be random?

a. Every person in the population has the same likelihood of being included in the sample.

b. The characteristics of the sample are the same as the characteristics of the population.

c. The choice of the method of selecting individuals from the population is governed entirely by chance.

d. Choosing the persons who are close to us

e. Proportions of various groups selected are equal to corresponding proportions in the population.

16) In a normal distribution with mean 40 and variance 16, at what percentile rank does a score of 50 falls?

a. 50.85%

b. 12.44%

c. 82.57%

d. 49.18%

e. 99.38%

<div align="right">**Answer:E**</div>

17) True statement concerning the chi-square test included all the following Except?

a. Chi-square is usually upper one-sided test

 b. Degree of freedom depended on number of columns and number of rows

c. The tabulated value depends on the degree of freedom

 d. Chi-square test depends on both the observed and the expected values of each cell

 e. Chi-square test used for continuous data

<div align="right">**Answer:E**</div>

18) Normal distribution curve is a type of?

a. Bar Graph

 b. Line Graph

c. Frequency polygon (Histogram)

d. Scatter Diagram

 e. Pie Chart

<div align="right">**Answer:C**</div>

19) Accept the null hypothesis while it is true?

 a. A correct decision

b. Type I error (Alpha Error)

c. None of the above is correct

d. Type II Error (Beta Error)

e. Power of the study

20) In assessment of Intelligence Quotient of 240 primary school children, one child had a score greater than 60 of the total children. What is the percentile rank of this child?

a. Can't be calculated

b. 25th

c. 90th

d. 44th

e. 75th

21) The best graphical presentation of the COVID-19 in Jordan in the past 5 months is?

a. Line graph

b. Histogram

c. Frequency polygon

d. Pie chart

e. Bar graph

22) For a symmetrical distribution, the mean and median are?

a. Equals

b. Insufficient information to decide

c. Preset at equal distances on opposite sides of the mode

d. Always different

e. Possibly the same. possibly different

23) Concerning the chi-square test one statement is not true?

a. The degree of freedom is (c-l) X (r-1)

b. Applied in qualitative data

c. It is used when we have more than two groups of the population

d. Can be applied when we have proportion rate alone

e. It is used when we have two groups of the population

24) Assuming that: level of significance or a=0.05, and two-sided test. The Calculated Value (t) = 1.78, and the sample size =78. So, the p-value is?

a. P less than 0.05 and more than 0.020

b. P less than 0.05 and more than 0.010

c. P less than 0.001

d. P less than 0.100 and more than 0.050

e. P = 0.010

25) When using an alpha level of 0.05 then the test considered statistically significant if?

a. p less than 0.04

b. p = 0.06

c. p less than 0.1

d. p more than 0.05

e. p = 0.21

26) In 4x4 contingency table the degree of freedom for applying a chi square is?

a. 1

 b. 8

c. 4

 d. 9

e. 16

27) In a normal distribution with mean 30 and variance 25, at what percentile rank does a score of 42 falls?

 a. 15.82%

 b. 82%

c. 49.18%

d. 50.33%

 e. 99.18%

28) In assessment of Intelligence Quotient of 360 primary school children, one child had a score greater than 90 of the total children. What is the percentile rank of this child?

a. 90th

 b. 25th

 c. 10th

d. 5th

e. 75th

29) In Chi-square test, the tabulated chi-square value (critical value) depends on?

a. The product of (c-1) and (r-1)

b. level of a and df

c. The designated level of a

d. The difference between 0 and E

e. The expected value for each cell

Answer: B

30) The null hypothesis will be rejected if?

a. The expected value for each column is equal to the expected value of the corresponding row

b. The difference between the observed and expected values for each cell is large

c. The observed value for each cell is equal to zero

d. The difference between the observed and expected value for each cell is small

e. The expected values in all the cells are equal

Answer:B

31) Gaussian distribution is characterized by all of the following except?

a. The mean, mode and median values are coinciding

b. It is a bell-shaped continuous curve

c. The tails never touch the base

d. It is described by two parameters: the mean and standard deviations

e. About 2/3 of the probability under the curve fall within two standard deviations around the mean

32) In one city five white children and seven black children are bitten by rats.The white children are aging 3, 6, 4, 5,and 3 years The black children are aging 4, 2, 5, 3, 2, 4, and 1 years. Based on this information, it can be determined that?

a. The means age for black children is equal to that for white children.

 b. The mean age for black children is less than that for white children.

 c. The mean age for the white children cannot be calculated.

d. The mean age for black children and for white children cannot be calculated

 e. The mean age for black children is more than that for white children

Answer:B

33) Accept the null while it is false?

a. Type II Error (Beta Error)

 b. Type I error (Alpha Error)

c. A correct decision

d. Power ofthe study

e. None of the above is correct

Answer:A

34) If the size of the sample being used to assess Blood Pressure at Al-Karak is increased then the width of a 0.95 confidence interval estimate of the mean of blood pressure for the Al-Karak population will?

 a. There is no relation between the size of the sampled and the confidence interval

b. Become narrower c. Not be changed.

d. Become wider.

e. The effect on the width cannot be determined from the given information

<div align="right">

Answer:B

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35) On the same test, Sara scored at the 95th percentile, and Dina scored at the 87th. This means that? a. Sara is 8% better than Dina

b. Sara scored 8 more points than Dina

c. There were only 8 people smarter than both Sara and Dina.

d. 8% of those taking the test got scores ranging between Sara's and Dina's.

e. Dina is 8% better than Sara.

<div align="right">

Answer:D

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36) Given that a distribution has a mean of 32 and a standard deviation of 4, what score will be associated with a standard Z score of 2?

a. 40

b. 38

c. 32

d. 42

e. 26

<div align="right">

Answer:A

</div>

37) Which of the following statements is correct in the chi-square test about hypothesis testing?

a. One not reject the alternate hypothesis when there is no significant difference

b. Null hypothesis is using proportion one is equal proportion two

c. the alternate hypothesis is proportion one is equal proportion two

d. Null hypothesis is using proportion one is not equal proportion two

e. Null hypothesis is mean one equal mean two

38) The temperature of 10 subjects suffering from tonsillitis before (40,40,37,38,39,39,38,38,39,38) and after 4 hours of Panadol therapy became (37,38,3838.37.37.38,38,37,37), Respectively. (Assuming that: level of significance or a=0.05, and two-sided test). The Calculated Value (t) is?

a. 5.1

b. 6.6

c. 1.2

d. 3.2

e. 2.7

39) A distribution which have more than one point of concentration is called?

a. Symmetrical

b. Multi-modal

c. Negatively skewed

d. Little Kurtosis

e. Positively skewed

40) If we want to know whether Indian women are taller than Jordanian women according to their height (cm). And we know the following information for Indian women: sample size = 60, mean height = 180 cm, standard deviation = 5. And forJordanian women: sample size = 50, mean height = 170 cm. standard deviation = 3. (Assuming that: level of

significance or a=0.05, and two-sided test). The Calculated Value (t) is? a. 10.5

b. 7.2

c. 12.4

d. 6.3

e. 3.8

Answer:C

41) A Simple random sample IS one where:

a. you use the random digit

b. you apply a pre define system

c. you decide a sample size and sample proportionately from the population

d. you have to categorize the area into sectors

e. you choose each item with no regard to previous choices

Answer:A

42) In a group of 100 children their mean weight is 15 kg. The standard deviation is :1.5 kg. Which one of the following is true?

a. 99% of all children weight between 12 and 18 kg

b. 68% of all children weight between 12and 18.5kg

c. 95% of all children weight between 12 and 18 kg

d. 95% of all children weight between 13.5- and 16.5kg

e. 99% of all children weigh between 13.5 and 16.5kg

Answer:C

43) Suppose we are interested in the average cholesterol level measurements of the population at AlKarak Governorate: the set of cholesterol measurements of people at Mu'tah district comprise?

a. parameters

 b. a statistic

 c. a sample

d. an element

e. a population

Answer:C

44) Out of 7 births in a hospital, 3 babies weighed over 2.25 kg and 3 weighed less than 2.25 kg. What value does 2.25 represent?

a. Standard Error

 b. Mode

c. Mean

d. Standard Deviation

e. Median

Answer:E

45) If the Sample size equal to 256 teacher, and the Mean Systolic blood pressure equal to 120 mmHg, and the Standard deviation equal to 6. So, the percentile ranks of a teacher whose blood pressure equal to 126 mmHg is?

a. 84th

b. 3rd

c. Can't be calculated

 d. 20th

 e. 65th

Answer:A

46) What percent of cases are likely to be between 86 and 93 in a normal distribution with mean 87 and variance 4?

a. 30.72%

 b. 72.02%

c. 49.87%

d. 69.01%

e. 30.85%

47) The standard error of the mean is affected by?

 a. Median of the data

b. Mean of the data

 c. population size

d. type of the sample

e. Sample size

48) Linear representation of frequency distribution obtained byjoining the midpoint of class intervals is:

a.Bar chart

b. Frequency distribution table

c. Pie chart

d. Frequency polygon

e. Histogram

49) When we accept the null hypothesis; (at level of significance = 0.05) this means that?

a. p less than 0.005

b. p more than 0.100

c. p less than 0.010

 d. p less than 0.030

e. p more than 0.003

Answer:B

50) Which is INCORRECT statement regarding the standard normal distribution?

a. Standard normal distribution may be not symmetrical

 b. Standard normal distribution have a graph and equation

 c. Mean equal to zero d. Standard deviation equal to 1

e. For a distribution to be normal, a certain proportion of the entire area must occur between specific values of the standard deviation

Answer:A

51) A distribution with a tail that goes to the left is called?

 a. Negatively skewed

b. Multi-modal

 c. Symmetrical

 d. Little Kurtosis

e. Positively skewed

Answer:A

52) The percent of area of normal curve between Z = -0.97 and the mean is?

a. 61.79 %

b. 50.33 %

c. 11.79 %

d. 33.40%

e. Can't be calculated

Answer:D

53) testing the hypothesis, it is important to know the following except?

a. Level of significance

b. Type of the test of significance

c. Degree of freedom

d. Type of the data that we have

e. Type of the Sample

Answer:E

54) In a group of 100 children, the mean weight of children is 15 kg. The standard deviation is 1.5 kg. Which one of the following is true?

a. 95% of all children weight between 13.5 and 16.5kg

b. 95% of all children weight between 10.5 and 19.5 kg

c. 99% of all children weight between 13.5 and 16.5kg

d. 99% of all children weight between 12 and 18 kg

e. 95% of all children weight between 12 and 18 kg

Answer:E

55) In one city five white children and seven black children are bitten by rats. The white children are aging 3, 6, 4, 5, and 3 years. The black children are aging 4, 2, 5, 3, 2, 4, and 1 years. Based on this information, it can be determined that?

a. The median age for black children equals that for white children

b. The median age for the black is smaller than that for the white children

c. The median age for black children is greater than that for white children.

d. The median age for the black and white children cannot be compared

e. The median age for black children is twice for white children.

Answer:B

56) Characteristics of a population are called _, while those of a sample are termed ?

a. Statistics; variables

b. Statistics; measures

c. Statistics; parameters

d. Variables: measures

e. Parameters; statistics

Answer:E

57) A population is?

a. a subset of a population

b. a subset of a sample

c. a number or measurements collected as a result of observation

d. a complete set of individuals. Objects. Or measurements having some common observable characteristics

e. a characteristic of a population which is measurable

Answer:D

58) A (simple) random sample is defined by?

a. quantity of selection

b. the method of selection

c. duration of selection

d. its degree of resemblance to the population

e. outcome of selection

Answer:B

59) What percent of the area of a distribution lies between the first and third Quartiles?

a. 50

b. 75

c. The question can't be answered without knowledge of the specific distribution

d. 68

e. 25

Answer:A

60) The state or quality of flatness or peakedness of a distribution called?

a. Symmetrical

b. Kurtosis

c. Positively skewed

d. Negatively skewed

e. Multimodal

Answer:B

61) Gaussian distribution are characterized by all of the following EXCEPT?

a. It is described by two parameters: the mean and standard deviations

b. It is bell shaped, continuous curve

c. The tails never touch the base

d. The mean, mode and the median values are equal to one

e. About 68% of the probability under the curve falls within one standard deviation around the mean

Answer:D

62) If it is known that the mean blood sugar of adults in Jordan is 120 (u), and we want to test whether mean blood sugar of adults in AlKarak governorate is the same or different from the Jordanian population. The sample size = 81 adults, their arithmetic mean of blood sugar = 124 and standard deviation = 18. (Assuming that: level of significance or 3:005, and two- sided test). The Calculated Value (t) is?

A. 3.22

b. 1.55

c. 4.15

d. 2.50

e. 2.00

Answer:E

63) If the birth weight of each of the 15 babies born in a hospital in a day is found to be 2.55 kg. then the standard deviation of this sample will be?

a. 0

b. 0.28

c. 3.8

d. 2.8

e. 1

Answer:A

64) A distribution is relatively flat in the middle and has thin tail: it has?

a. Large Kurtosis

b. Positive skewness

c. Multi-modal

 d. Negative skewness

e. Little Kurtosis

65) Discrete variable is?

a. Its value is not necessarily limited to the set of integers

b. Its value is limited to the set of integers

c. There is no interruption between values

d. To be presented diagrammatically by histogram

 e. not a real numbers

66) All the following are true about the p-value EXCEPT?

 a. It is a calculated probability of chance factor

 b. All statistical significance tests should consider p-value

c. It is reflecting the sampling error

d. It is the probability of the influencing factor

 e. If it is small conventionally less than 0.05 H0 is rejected as implausible.

67) A random sample is used to?

a. Make the sample representative to the population

b. Be suitable for an inferential test

c. Minimize the cost of a study

d. Eliminate a selection of bias

e. Give every member in the population the same probability of selection

Answer:A

68) Instead of having a sample scattered over the entire coverage area, the sample is more localized in relatively few centers". This is the main advantage of?

a. Simple random sample

b. Convenient sampling

c. Cluster random sample

d. Stratified random sample

e. Systematic random sample

Answer:C

69) which is INCORECT Statement about the symmetrical distribution

a. If the tail goes to the left, the distribution is skewed to the right and is positively skewed

b. If a distribution is asymmetrical it is considered to be skewed

c. The symmetry of variation is indicated by skewness

d. The tail of a distribution indicates the type of skewness

e. A symmetrical distribution has no skewness

Answer:A

70) One statement is INCORRECT for the assumption of paired t test?

a. The data are categorical

b. Randomization of the sample

c. The data are continuous

d. Dependency of the sample

e. Normal distribution of the population of the sample

Answer:A

71) 1 minus probability of type II error?

a. Type II Error (Beta Error)

b. A correct decision

c. Type I error (Alpha Error)

d. Power of the study

e. None of the above is correct

Answer:D

72) Given that a distribution has a mean of 32 and a standard deviation of 4, what score will be associated with a standard 2 score of 1.5?

a. 42

b. 40

c. 26

d. 32

e. 38

Answer:E

73) Gaussian distribution are characterized by all of the following EXCEPT?

 a. The mean equal one and the standard deviation equal zero

b. It is bell shaped, continuous curve

 c. The tails never touch the base

d. About 95% of the probability under the curve fall within two standard deviation around the mean

e. It is described by two parameters: the mean and standard deviations

Answer:A

74) The sum of all values of an observed data divided by number of observation in that data is termed? A. Mean

b. Stander Deviation

c. Median

d. Mode

e. Stander deviation

Answer:A

75) One statement is incorrect for assumption in one sample t test?

 a. Normality distribution of the population of the sample closed

 b. Independency of the sample

 c. Randomization of the sample

 d. None of the above

e. Dependency of the sample

Answer:E

76) Standard deviation of the sampling distribution of averages (means) called?

a. Variance

b. Standard deviation

c. Sample size

d. Standard Error

e. Sampling probability

Answer:D

77) If we want to cover 99% of the population under the normal distribution curve we have to?

a. Move one S.D above and one 5.0 below the mean

b. Move 2.58 SE above and 2.58 SE below the mean

c. Move 1.96 SD above and 1.96 SD below the mean

d. Move 2.58 SD above and 2.58 50 below the mean

e. Shift 2 SD above and 2 5.0 below the mean

Answer:B

78) Assume that the test scores of 500 students are normally distributed with a mean of 80 and a standard deviation of 4. The number of students scoring between 86 and 82? Select one:

a. Can't be calculated

b. 121

c. 146

d. 155

e. 228

Answer:B

79) The black children are aging 4, 2, 5 3, 2, 4, and 1 years. Based on this information, it can be determined that? Select one:

a. There is no mode in the age of black and white children

b. The age in black children is unimodal while in white children is bimodal

c. The age in black children is bimodal and also in the white children

d. The age in both black and white children is unimodal

e. The age in black children is bimodal and in the white children is unimodal

Answer:E

80) If alpha level (a) set to be 0.01 then the test considered to be statistically not significant when? Select one:

a. p = 0.005

b. p = 0.007

c. p = 0.001

d. p = 0.000

e. p = 0.013

Answer:E

81- The following table shows the distribution of infants attending a primary health care center in one month according to height and sex. The types of observations in this table are?

Height (cm)	SEX	
	Male	Female
50 - 59	10	15
60 - 69	5	20
70 - 79	15	5
80 - 90	20	10

Select one:

a. Both variables are quantitative discrete data

b. Both variables are qualitative ordinal data

c. Age is a quantitative continuous variable and sex is nominal

d. Both variables are quantitative continuous data

e. Age is a quantitative variable and sex is a qualitative ordinal variable

Answer:C

82- The following table presents the distribution of women according to the care received during pregnancy and thecomplications experienced during delivery, The expected value for women who did not receive care and experienced complications during delivery is equal to?

Care received	Complications		Total
	Present	Absent	
No	50	90	140
Yes	20	140	160
Total	70	230	300

Select one:

a. (70 y 230)/ 300

b. (70 x 140)/300

c. (50 x 20)/ 70

d. (50 x 70)/ 300

e. (50 x 70)/ 240

Answer:B

83- The following table presents the distribution of 1000 women suffering from cystitis according to the prescribed antibiotic therapy as well as the treatment outcome The expected value for those who have been cured by amoxicillin is?

Treatment outcome	Prescribed antibiotic			Total
	TMP-SMX	Amoxicillin	Cyclacillin	
Cured	110	60	130	300
Improved	105	150	210	465
Not cured	35	90	110	235
Total	250	300	450	1000

Select one:

a. 18

b. 60

c. 90

d. 70.5

e. 139.5

Answer:C

84- The following table presents the distribution of 1000 women suffering from cystitis according to the prescribed antibiotic therapy as well as the treatment outcome. The degree of freedom of the test statistics is?

Treatment outcome	Prescribed antibiotic			Total
	TMP-SMX	Amoxicillin	Cyclacillin	
Cured	110	60	130	300
Improved	105	150	210	465
Not cured	35	90	110	235
Total	250	300	450	1000

Select one:

a. 997

b. a

c. 4

d. 991

e. 6

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Answer:C

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85- A sample of 150 will be selected to represent the population of 5000 subjects in the following table, using the method of proportional allocation. The number of university graduates in the sample will be equal to?

Educational level	Frequency
Illiterate	1800
School education	1700
University graduate	1500
Total	5000

Select one:

a. 60

b. 45

c. 50

d. 26

e. 10

<div align="right">

Answer:B

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86- A sample of 150 will be selected to represent the population of 5000 subjects in the following table, usingthe method of proportional allocation. The sampling method is:

Educational level	Frequency
Illiterate	1800
School education	1700
University graduate	1500
Total	5000

Select one:

a. Multistage sample

b. Stratified random sample

c. Cluster sample

d. Systematic random sample

e. Simple random sample

Answer :   B

"إِنَّما تُقطَع دُروب الحَياة الشاقَّة، وتُطوىٰ المسافات النائية، وتُقضَىٰ الأسفار المُضنِيَة؛ بالإيمان، والتوكُّل، والعزيمة، والثَّقة، واليَقين، واسْتحضار أنّ الله خَير صَاحِب، وسَنَد، ومُعِين، فَما طابَت الأيام إلَّا به، وما قُضِيَت الأمُور إلَّا بتوفِيقه، وهُو نِعم المولىٰ والوَكيل". ☒

لا تنسونا من صالح دعائكم

مع أمنياتنا بالتوفيق والنجاح

#لجنة _الطب _والجراحة