قائمة الاسئلة 2025-05-01 05:19

إحصاء حيوي صيدلاني الرابع كلية الصيدلة

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1) Pharmaceutical biostatistics:
   1) + a. The science of Ordering the pharmaceutical data and biological data in figures and tables.
   2) - b. Science of pharmacy.
   3) - c. Science of physiology.
   4) - d. None of the mentioned.
2) During spectrophotometric analysis of azythromycin tablets content, the obtained data were:500,500,510,499,502 and 503 mg, the average
   1) - a. 500 mg.
   2) + b. ≈502.33 mg.
   3) - c. 499mg.
   4) - d. All the mentioned.
3) During spectrophotometric analysis of azythromycin tablets content, the obtained data were:500,500,510,499,502 and 503 mg, the median equals:
   1) - a. 499.0
   2) - b. 500.0
   3) + c. 501.0
   4) - d. None of the mentioned.
4) During spectrophotometric analysis of azythromycin tablets content, the obtained data were:500,500,510,499,502 and 503 mg, the standard deviation SD equals:
   1) - a. ≈3.03
   2) + b. ≈4.03
   3) - c.≈5.03
   4) - d. ≈6.03
5) During spectrophotometric analysis of azythromycin tablets content, the obtained data were:500,500,510,499,502 and 503 mg, the variance (v) equals:
   1) - a. ≈4.03
   2) + b. ≈16.24
   3) - c. ≈20.00
   4) - d. All the mentioned.
6) During spectrophotometric analysis of azythromycin tablets content, the obtained data were:500,500,510,499,502 and 503 mg, the range equals:
   1) - a. 499-510
   2) - b. 11
   3) + c. (a&b)
   4) - d. None of the mentioned.
7) During spectrophotometric analysis of azythromycin tablets content, the obtained data were:500,500,510,499,502 and 503 mg, the relative standard deviation % equals:
   1) - a. ≈0.50
   2) - b. ≈0.20
   3) + c. ≈0.80
   4) - d. None of the mentioned.
8) One of the following can be used to accept or reject a result in a group of data:
   1) - a. Student t- test.
   2) - b. Student F-test.
   3) + c. Q.test.

4) - d. None of the mentioned.

9) The precision always expresses on error% and repeatability?
1) + a. True.
2) - b. False.

10) The statistics is not important in any research?
1) - a. True.
2) + b. False.

11) During analysis of ciprofloxacin 500 mg/tablet using spectrophotometry,the following data were obtained,the correlation coeffecient (r) equals:

Q.11

Conc (µg/mL)	5	10	15	20
Absorbance	0.3	0.7	0.8	1.2

1) - a. ≈0.999
2) - b. ≈0.888
3) + c. ≈0.978
4) - d. All the mentioned.

12) 12) During analysis of ciprofloxacin 500 mg/tablet using spectrophotometry,the following data were obtained,the slope (b) equals :

Q.12

Conc (µg/mL)	5	10	15	20
Absorbance	0.3	0.7	0.8	1.2

1) + a. 0.056
2) - b. 0.077
3) - c. 0.088
4) - d. 0.999

13) During analysis of ciprofloxacin 500 mg/tablet using spectrophotometry,the following data were obtained,the intercept (a) equals:

Q.13

Conc (µg/mL)	5	10	15	20
Absorbance	0.3	0.7	0.8	1.2

1) - a.0.001
2) - b. 0.002
3) + c. 0.05
4) - d. None of the mentioned.

14) During analysis of ciprofloxacin 500 mg/tablet using spectrophotometry,the following data were obtained,the the description of correlation coeffecient is:

Q.14

Conc (µg/mL)	5	10	15	20
Absorbance	0.3	0.7	0.8	1.2

1) + a. Excellent.

2) - b. Very good.
3) - c. Good.
4) - d. weak

15) A soda ash sample is analyzed in the analytical chemistry laboratory by titration with standard hydrochloric acid. The analysis is performed in triplicate with the following results: 93.50, 93.58, and 93.43 wt% Na2CO3. Within what range are you 95% confident that the true value lies?

Q.15

Values of *t* for *ν* Degrees of Freedom for Various Confidence Levels[a]

	Confidence Level			
ν	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
5	2.015	2.571	4.032	4.773
6	1.943	2.447	3.707	4.317
7	1.895	2.365	3.500	4.029
8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) - a. 90.50 ± 0.19
2) - b. 99.50 ± 0.19
3) + c. 93.50 ± 0.19
4) - d. All the mentioned.

16) Student F test is used when doing comparasion between
1) - a. One set (group) of data.
2) + b. Two sets (groups) of data.
3) - c. Three groups and methods data.
4) - d. All the mentioned.

17) Student t test is used when doing comparasion between
1) - a. One set (group) of data.
2) + b. Two sets (groups) of data.
3) - c. Three groups and methods data.
4) - d. All the mentioned.

18) ANOVA test is used when doing comparasion between
1) - a. One set (group) of data.
2) - b. Two sets (groups) of data.
3) + c. Three groups and methods data.
4) - d. All the mentioned.

19) You are developing a new colorimetric procedure for determining the glucose content of blood serum. You have chosen the standard Folin-Wu procedure with which to compare your results. From the following two sets of replicate analyses on the same sample, determine whether the variance of your method differs significantly from that of the standard reference method.

Q.19

Your Method (mg/dL)	*Folin-Wu Method (mg/dL)*
127	130
125	128
123	131
130	129
131	127
126	125
129	

Q.19 **Values of *F* at the 95% Confidence Level**

	$v_1 = 2$	3	4	5	6	7	8	9	10	15	20	30
$v_2 = 2$	19.0	19.2	19.2	19.3	19.3	19.4	19.4	19.4	19.4	19.4	19.4	19.5
3	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.70	8.66	8.62
4	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.86	5.80	5.75
5	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.62	4.56	4.50
6	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	3.94	3.87	3.81
7	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.51	3.44	3.38
8	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.22	3.15	3.08
9	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.01	2.94	2.86
10	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.85	2.77	2.70
15	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.40	2.33	2.25
20	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.20	2.12	2.04
30	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.01	1.93	1.84

1) + a. There is no significant difference
2) - b. There is significant difference
3) - c. All the mentioned.
4) - d. None of the mentioned.

20) You are developing a procedure for determining traces of copper in biological materials using a wet digestion followed by measurement by atomic absorption spectrophotometry. In order to test the validity of the method, you obtain a certified reference material and analyze this material. Five replicas are sampled and analyzed, and the mean of the results is found to be 10.8 ppm with a standard deviation of ±0.7 ppm. The listed reference value is 11.7 ppm. Does your method give a statistically correct value relative to the certified value at the 95% confidence level?

Values of t for ν Degrees of Freedom for Various Confidence Levels[a]

Q.20

ν	Confidence Level 90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
5	2.015	2.571	4.032	4.773
6	1.943	2.447	3.707	4.317
7	1.895	2.365	3.500	4.029
8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) - a. There is no significant difference
2) + b. There is significant difference

21) You are developing a new analytical method for the determination of blood urea nitrogen (BUN). You want to ascertain whether your method differs significantly from a standard method for determining a range of sample concentrations expected to be found in the routine laboratory. It has been ascertained that the two methods have comparable precision. Following are two sets of results for a number of individual samples:

Q.21

Sample	*Your Method (mg/dL)*	*Standard Method (mg/dL)*
A	10.2	10.5
B	12.7	11.9
C	8.6	8.7
D	17.5	16.9
E	11.2	10.9
F	11.5	11.1

Q.21

Values of *t* for *ν* Degrees of Freedom for Various Confidence Levels[a]

	Confidence Level			
ν	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
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8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) \+ a. t calculated < t tabulated value.
2) \- b. t calculated > t tabulated value.
3) \- c. I don't know.
4) \- d. All the mentioned.

22) _You are developing a new analytical method for the determination of blood urea nitrogen (BUN). You want to ascertain whether your method differs significantly from a standard method for determining a range of sample concentrations expected to be found in the routine laboratory. It has been ascertained that the two methods have comparable precision. Following are two sets of results for a number of individual samples:

Q.22

Sample	*Your Method (mg/dL)*	*Standard Method (mg/dL)*
A	10.2	10.5
B	12.7	11.9
C	8.6	8.7
D	17.5	16.9
E	11.2	10.9
F	11.5	11.1

Q.22

Values of *t* for *ν* Degrees of Freedom for Various Confidence Levels[a]

	Confidence Level			
ν	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
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8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) + a. There is no significant difference
2) - b. There is significant difference
3) - c. (a&b)
4) - d. None of the mentioned.

23) Well-water fluoride concentrations (in mg/L) have been determined in two adjoining counties, and are as follows. Does County B have a statistically different amount of fluoride in their water compared to County A?

Q.23

Values of *t* for *ν* Degrees of Freedom for Various Confidence Levels[a]

	Confidence Level			
ν	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
5	2.015	2.571	4.032	4.773
6	1.943	2.447	3.707	4.317
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10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

Q.23

County A	County B
0.76	1.20
0.81	1.41
0.77	1.69
0.79	0.91
0.80	0.50
0.78	1.80
0.76	1.53

1) - a. t calculated < t tabulated value.
2) + b. t calculated > t tabulated value.
3) - c. (a&b)
4) - d. None of the mentioned.

24) You developed a new method for determination of ciprofloxacin in tablets, the data 500, 505, 504, 503,500 and 500 mg were obtained using your method. While when a reference method used , the reference value was 500mg. Does your method give a statistically correct value relative to the certified value at the 95% confidence level, so :

Q.24

Values of *t* for *ν* Degrees of Freedom for Various Confidence Levels[a]

	Confidence Level			
ν	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
5	2.015	2.571	4.032	4.773
6	1.943	2.447	3.707	4.317
7	1.895	2.365	3.500	4.029
8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) - a. t calculated =2.15
2) - b. t tabulated = 2.57

3) + c. (a&b)
4) - d. None of the mentioned.

25) _You developed a new method for determination of ciprofloxacin in tablets, the data 500, 505, 504, 503,500 and 500 mg were obtained using your method. While when a reference method used , the reference value was 500mg. Does your method give a statistically correct value relative to the certified value at the 95% confidence level, so :

Q.25

Values of t for ν Degrees of Freedom for Various Confidence Levels[a]

	Confidence Level			
ν	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
5	2.015	2.571	4.032	4.773
6	1.943	2.447	3.707	4.317
7	1.895	2.365	3.500	4.029
8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) + a. There is no significant difference
2) - b. There is significant difference
3) - c. (a&b)
4) - d. None of the mentioned.

26) Rounding of the number 9.47 to the first digit after decimal point equals:
1) - a. 9.48
2) - b. 9.47
3) + c. 9.5
4) - d. 9,4

27) The mean of the following set of analytical results:
15.67, 15.69, and 16.03 g. equals
1) + a. ≈15.8
2) - b. ≈ 16.8
3) - c. ≈ 17.76
4) - d. None of the mentioned.

28) The standard deviation SD of the following set of analytical results:
15.67, 15.69, and 16.03 g equals:
1) - a.0.50
2) + b. 0.20
3) - c. 0.70
4) - d. All the mentioned.

29) If you have following results: 96.50, 98.58, and 94.43 wt% of a drug . Within what range are you

95% confident that the true value lies?

Q.29

Values of t for ν Degrees of Freedom for Various Confidence Levels[a]

ν	Confidence Level			
	90%	95%	99%	99.5%
1	6.314	12.706	63.657	127.32
2	2.920	4.303	9.925	14.089
3	2.353	3.182	5.841	7.453
4	2.132	2.776	4.604	5.598
5	2.015	2.571	4.032	4.773
6	1.943	2.447	3.707	4.317
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8	1.860	2.306	3.355	3.832
9	1.833	2.262	3.250	3.690
10	1.812	2.228	3.169	3.581
15	1.753	2.131	2.947	3.252
20	1.725	2.086	2.845	3.153
25	1.708	2.060	2.787	3.078
∞	1.645	1.960	2.576	2.807

1) + a. 96.50± 5.15
2) - b. 97.50± 8.16
3) - c. 99.00± 0.05
4) - d. None of the mentioned.

30) When the Confidence Level in statistical calculation for certain data 95%, this meaning that:
1) - a. 5 tests of 100 test are wrong.
2) - b. 95 tests of 100 test are true.
3) + c. (a&b)
4) - d. None of the mentioned.

31) If you have in a research the obtained data; 2, 3, 5, 6 and 8 so the median equals:
1) - a. 2
2) - b. 3
3) + c. 5
4) - d. 8

32) If you have in a research the obtained data; 2, 3, 5, 6 and 8 so the medium equals:
1) - a. 4
2) + b. 4.8
3) - c. 5
4) - d. 8

33) If you have in a research the obtained data; 2, 3, 5, 6 and 8 so the range equals:
1) + a. 2-8
2) - b. 5
3) - c. 4
4) - d. 8

34) Standard deviation SD expresses on the errors during analysis.
1) + a. True.
2) - b. False.

35) t tabulated value is obtaines from the statistical t values table?

1) + a. True.
2) - b. False.