Test bank
Chi sequare & T test

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1. researcher wants to compare mean pain score (tested on a scale from 1-100) between groups; 1st degree burns patients, 2nd degree burns patients, and 3rd degree burn patients. The appropriate test statistic to use is:

A. Kruskal Wallis H.
B. Independent samples t test
C. mann whitney U.
D. paired - sample t test.
E. Pearson's Chi-square

2. A researcher studied the association between gender (male or female) and marital status (Single, married, divorced, or widow) using Chi -square, the degrees of freedom in this test equal:

A. 5
B. 4
C. 3
D. 1
E. 2

3. The best decision given the following SPSS chi -square output of the relationship between age group (young adult, mid-age adult, older adult) and depression (Depressed or not depressed) is to, if Alpha=. 05: (p value = 0. 1)

A. Reject null hypothesis.
B. There is a statistically significant association between age group and depression.
C. keep null hypothesis
D. Missing data.

4. A researcher wants to compare mean blood glucose level in 3 samples, type 1 diabetic patients, type 2 diabetes patients, and healthy people, the appropriate test statistic to use is:

A. Parametric; analysis of variance (ANOVA).
B. Parametric; independent samples t test.
C. Non-parametric; Kruskal Wallis H.
D. Parametric; paired sample t test.
E. Non-parametric; Pearson's Chi-square

5. The best decision given the following SPSS chi-square output of the relationship between age group (young adult, mid-age adult, older adult) and depression (Depressed or not depressed) is to if Alpha=. 05:

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.821[a]	2	.244
Likelihood Ratio	2.815	2	.245
Linear-by-Linear Association	.832	1	.362
N of Valid Cases	606		

A. Reject null hypothesis.
B. There is a statistically significant association between age group and depression.
C. keep null hypothesis
D. Missing data.

6. A pharmaceutical company asked its researcher to conduct research to see the effectiveness of a certain drug. The results of the study gave a X_2 calc of 2. 03 if you knew that the degree of freedom is 1, what's the right statement:

A. Keep null hypothesis
B. He's 95% confident that there is statistically significant evidence that the drug is effective
C. He's 99% confident that there is statistically significant evidence that the drug is not effective (alpha . 05)
D. Reject null hypothesis
E. The drug is effective and should be taken to the next level of trial

7. A researcher calculated the value of chi-square to be = 6. 35. If df = 2, and alpha = . 10, Use this section of chi-square critical value table to pick the correct statement of the followings:

	$P(X \le x)$							
	0.010	0.025	0.050	0.100	0.900	0.950	0.975	0.990
r	$\chi^2_{0.99}(r)$	$\chi^2_{0.975}(r)$	$\chi^2_{0.95}(r)$	$\chi^2_{0.90}(r)$	$\chi^2_{0.10}(r)$	$\chi^2_{0.05}(r)$	$\chi^2_{0.025}(r)$	$\chi^2_{0.01}(r)$
1	0.000	0.001	0.004	0.016	2.706	3.841	5.024	6.635
2	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210
3	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.34
4	0.297	0.484	0.711	1.064	7.779	9.488	11.14	13.28
5	0.554	0.831	1.145	1.610	9.236	11.07	12.83	15.09
6	0.872	1.237	1.635	2.204	10.64	12.59	14.45	16.81
7	1.239	1.690	2.167	2.833	12.02	14.07	16.01	18.48
8	1.646	2.180	2.733	3.490	13.36	15.51	17.54	20.09
9	2.088	2.700	3.325	4.168	14.68	16.92	19.02	21.67
10	2.558	3.247	3.940	4.865	15.99	18.31	20.48	23.21

A. Critical value of chi-square is greater than calculated value of chi-square. Thus, reject null
B. Given these data, the researcher is unable to decide whether there is a statistically significant association.
C. critical value of chi-square is smaller than calculated value of chi-square. Thus, keep null hypothesis.
D. Critical value of chi-square is smaller than calculated value of chi-square. Thus, reject null hypothesis.
E. critical value of chi-square is greater than calculated value of chi-square. Thus, keep null hypothesis.

8. All of the following statements are correct regarding parametric statistics, EXCEPT:

A. Parametric statistics are based on fewer assumptions about the population than non parametric statistics.
B. Paired sample t test is an example of parametric statistics.
C. Parametric statistics require quantitative measurements that yield interval or ratio level data in the dependent variable
D. Parametric techniques are more powerful and more flexible than nonparametric techniques

9. A researcher wanted to study the difference in prevalence of smoking between males and females in a certain population. He used a chi square test to analyse the data as shown in the picture to the side. The degree of freedom in his test is

a) 1

b) 171

c)161

d)332

e)2

		Gender		Total
		Male	Female	
Do you smoke cigarettes?	Nonsmoker	149	148	297
	Past smoker	13	24	37

10. The mean body weight was compared between sample and sample 2. The SPSS output below shows the results. If alpha = . 01 , what is the best interpretation?

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diff
TIME	Equal variances assumed	.130	.729	-2.958	7	.021	-6.0000	
	Equal variances not assumed			-3.000	6.857	.020	-6.0000	

a. We are 90% confident that there is a statistically significant difference in mean body weight between population 1 and population 2.

b. We are 99% confident that there is a statistically significant difference in mean body weight between population 1 and population 2.

C. We are 99% confident that there is NO difference in mean body wait between population and population 2.

d. Levene's test is significant, so assumptions were not met.

e. Reject null hypothesis.

11. From the previous question, the best interpretation:

A. Reject null hypothesis.

B. There is a statistically significant association between age group and depression.

C. keep null hypothesis

D. Missing data.

12. A and B are independent samples. If sample A has 9 patients, and sample B has 10 patients,then degrees of freedom of this independent -sample t test equal:

A. 19

B. 18

C. 17

D. 2

E. 1

13. In a study that compared haemoglobin level between smokers and non-smokers, the calculated t = 2. 15, df 10, and alpha = . 05. Based on this section of t test critical value table, pick the correct statement:

	α			
df	0.250	0.100	0.050	0.025
1	1.000	3.078	6.314	12.706
2	0.816	1.886	2.920	4.303
3	0.765	1.638	2.353	3.182
4	0.741	1.533	2.132	2.776
5	0.727	1.476	2.015	2.571
6	0.718	1.440	1.943	2.447
7	0.711	1.415	1.895	2.365
8	0.706	1.397	1.860	2.306
9	0.703	1.383	1.833	2.262
10	0.700	1.372	1.812	2.228
11	0.697	1.363	1.796	2.201

A. We are 5% confident that there is a NO difference in haemoglobin level between smokers and non-smokers, on the population level.

B. We are 95% confident that there is a statistically significant difference in haemoglobin level between smokers and non-smokers, on the population level.

C. We are 99. 5% confident that there is a statistically significant difference in haemoglobin level between smokers and non-smokers, on the population level.

D. We are 95% confident that there is a NO difference in haemoglobin level between smokers and non- smokers, on the population level.

E. We are 5% confident that there is a statistically significant difference in haemoglobin level between smokers and non-smokers, on the population level.

14. Back to question number 6if the researcher's alpha was . 01, what's the right statement:

A. He's 95% confident that there's statistically significant evidence that the drug is effective

B. He's 95% confident that there's statistically significant evidence that the drug is not effective

C. He should reject null hypothesis

D. He's 99% confident that the drug is not effective

E. He's 99% confident that the drug is effective.

15. Which of the following statements is correct regarding dependent- sample t test?

a. It is used to compare means between two separate groups of people

b. It has the same t calc. equation as independent-sample t test

c. Its degrees of freedom equal number of individuals - 1

d. Its degrees of freedom equal number of pairs - 1

16. A researcher tested the association between alcohol use and liver failure using independent sample t test. He was 95% confident that there is a significant association between the two variables on the population level. Which of the following values oft proves his conclusion?

a. t calc. =4. 120 and t CV =4. 676.

b. t calc. =3. 578 and t CV =0. 188.

c. t calc. =3. 578 and t CV =4. 676.

d. t calc. =3. 019, p = . 075

e. t calc. =4. 120, p = . 490

17. A researcher wanted to see if a growth improvement supplement actually improved the growth of a group of children with growth hormone insufficiency. The supplement was given for a duration of five years then the heights of these children were measured to see i their average was similar to normal height average at their age. The collected data were studied by aT test. What is the degree of freedom of this test ?

a)111
b)57
c)56
d)54
e)55

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
pdi	56	104.1250	12.58435	1.68165

Answers

1. A
2. C
3. C
4. A
5. C
6. A
7. D
8. A
9. A
10. C
11. C
12. C
13. B
14. D
15. D
16. C
17. E

اللهم كن لغزة عونًا
اللهم إنا لا نملك إلا الدعاء لهم
فيارب لا ترد لنا دعاء ولا تخيب لنا رجاء
اللهم أنصر ضعفهم فإن ليس لهم سواك

Good luck 🫶