FINAL COLLECTED QUESTIONS OF BIOSTATISTICS 018

1. What is the sensitivity of a test showing the following results ?
    a) 13.8%
    b) 86.2%
    c) 4.8%
    d) 95.2%
    e) 94.5%

Test Result		Disease	No Disease
	Test positive	520	30
	Test negative	83	600

2. What are the MOST common problems related to adolescence reported in Jordan?
    a) Obesity - Acne - Depression
    b) Smoking - teenage pregnancy - depression
    c) Obesity – smoking – accidents
    d) Acne – teenage pregnancy – suicide
    e) Depression – suicide – smoking

3. What is the percent of citizens between the ages 10-19 in Jordan? (these are also adolescents if you haven't studied)
    a) 52 %
    b) 30 %
    c) 25%
    d) 33 %
    e) 40%
4. Two groups of soldiers were assigned to military bases in Vietnam and a European country from the year 1969 to the year 1974. In 1980 they were studied for emotional and psychological effects that may have resulted from that previous experience. This type of study is considered :
    a) Case – control study
    b) Cohort study
    c) Nonequivalent control group design
    d) Post test only control group
    e) Time series study

5. In a study observing the relationship between myopia (shortness of vision) and smart phone usage, Two groups of examinees one diagnosed with myopia and the other not, were asked about how long did they own their smartphone and how many hours a day in average did they use them in the last 2 years and for what, this type of study is considered:
    a) Cohort study
    b) Nonequivalent control group design
    c) Case control study
    d) Post test only -control group design
    e) Pretest- post test control group

6. Studies that focus on the relationship between a host and a disease agent, and the environment they were sit in that was perfect to cause the emergence of disease in the host are usually of the type:
    a) Analytical- causal studies
    b) Descriptive studies
    c) Experimental studies
    d) Interventional studies
    e) Time series study

7. Two groups of patients with hypertension were asked about the troubling side effects they faced while using their current medication, then one of the two groups was given an alternative treatment for a period of time. The two groups then were again asked about what side effects they may have faced in this period, this type of study is considered:

    a) Cohort study
    b) Nonequivalent control group design
    c) Case control study
    d) Post test only -control group design
    e) Pretest- post test control group

8. A doctor held a study about the relationship between smoking and lung cancer, he used a case – control model to make his observations. His case group comprised patients with lung cancer, but his control group comprised patients with emphysema, he made sure to randomise both groups. It's thought that there's a flaw in his study profile, this problem might be:
    a) Systemic bias
    b) His study idea is wrong
    c) There's a confounder
    d) Lack of randomisation
    e) I don't think there is anything wrong with his study

9. One of the following is not considered a risk factor of major depression:
    a) Being a female
    b) Genetic predisposition
    c) Aging
    d) Having a Chronic disease
    e) Major loss or stress

10. A researcher wanted to test whether a relationship between phone radiations and lung cancer exists or not. He took two ready samples from the hospital but he made the mistake by taking exposures depending on the disease. What kind of error was he responsible for?
    a) Selection bias
    b) Information bias
    c) Random error
    d) Confounding
    e) Misclassification

11. A personality test was carried on a patient and the result was that he is depressed. After 2 years symptoms of depression are present in this patient. What kind of validity does this test have?
    a) Internal validity
    b) External validity
    c) Criterion validity
    d) Construct validity
    e) Logical validity

12. 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

13. 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 if their average was similar to normal height average at their age. The collected data were studied by a T 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

You have the following group of numbers: 71 74 77 100 94 83 101 108 76 87 83 99 84 87 98 103 83 75. answer the following questions 14, 15 & 16:

14. The mean for them is:
    a) 88.2
    b) 90.3
    c) 92
    d) 87.1
    e) 86.9

15. The fifth decile is :
    a) 84.5
    b) 81
    c) 84
    d) 83
    e) 78

16. The inter quartile range is:
    a) 15
    b) 20
    c) 23.5
    d) 24
    e) 19.7

a Japanese organisation held a research to study the variation in baby birth weights, the data collected gave a mean of 3.3 kg and a standard deviation of 200 grams. answer the following questions:

17. What is the coefficient of variance?
    a) Good, it's 165%
    b) Bad, it's 165%
    c) Bad it's 130%
    d) Bad it's 60.6%
    e) Good it's 6.06%

18. What is the variance?
    a) .04 kg^2
    b) 40 kg^2
    c) 400 kg^2
    d) 40000 kg^2
    e) 20000 kg^2

19. What is the probability that a baby would weigh between 2.7 and 3.9?
    a) 99.7%
    b) 75%
    c) 68%
    d) 98.7%
    e) 77.6%

20. What is the probability that a baby would weigh more than 3.8?
    a) .99379
    b) .00621
    c) .99180
    d) .0082
    e) .97982

21. What is the probability that a baby would weigh up to 120 grams above the mean?
    a) .72907
    b) .73237
    c) .74537
    d) .75175
    e) .72575

A researcher wanted to study the relationship between the number of studying hours and the level of performance of medical students. he went to three major medicine faculties to choose his subjects. The way he chose them was by taking every student in all sections numbered 1 and 2 of all basic years ending up with a sample size of 2436. Answer the following questions:

22. What was his method of sampling?
    a) Convenience sampling
    b) Stratified sampling
    c) Cluster sampling
    d) Systematic sampling
    e) Multistage sampling

23. The number of studying hours resemble which one of the following variables?
    a) Dependent variable
    b) Independent variable
    c) Confounding variable
    d) Silent variable
    e) Extraneous variable

24. The colleges the researcher chose the subjects from are considered:
    a) Study population
    b) Sampling frame
    c) Reference population
    d) Study subjects
    e) Environment of the study

If you knew that the performance of students was ranked to four levels as such: poor< fair< good< excellent , answer the following two questions:

25. What type of variable is the level of performance:
    a) Discrete ordinal
    b) Nominal
    c) Ratio
    d) Interval
    e) Constant

26. What is the tool the researcher most probably used from the information you gathered until now?
    a) Mann whitney U
    b) Kruskal wallis H
    c) Freindman's ANOVA
    d) Chi square
    e) Cochran's Q

27. This table shows the probabilities of the performance levels among students after analysation. If we took a student randomly, what is the probability that he'll have a performance above poor, but still not excellent?

Excellent	Good	Fair	Poor
.68	.16	.06	.10

    a) 16%
    b) 26%
    c) 32%
    d) 58%
    e) 22%

28. Observe the table to the side, one of the statements below regarding it is correct, choose it:
    a) Studying takes more than 5 hrs of all medical students day life.

1218	418	350	450
Above 3 hrs	Up to 3 hrs	Up to 2 hrs	Up to 1 hr

    b) All students study more than 3 hrs
    c) Half the students study more than 3 hrs
    d) Half the students study two hrs or less
    e) Half the students study between 2 to 3 hrs.

29. A researcher made the mistake of keeping the null hypothesis of his study question when in fact there was a statistical significance that allows him to reject it. What type of error would he have made?
    a) Type 1 error
    b) Type 2 error
    c) Random error
    d) Selection bias
    e) Systematic bias

30. The amount of people suffering depression who don't seek appropriate treatment is:
    a) Three quarters
    b) Two thirds
    c) One third
    d) 90 percent

e) 85 percent

31. After a thorough observation of the change pattern of her variables, a researcher noticed the presence of a variable that systematically changes with the independent variable and may be affecting the dependent variable, this is know as:
    a) A confounding variable
    b) An extraneous variable
    c) A systematic bias
    d) A random error
    e) A selection bias

32. The strongest epidemiological study model of the following is:
    a) Cohort studies
    b) Descriptive studies
    c) Experimental studies
    d) Case control studies
    e) Analytical studies

33. Highest smoking prevalence is in:
    a) Iraq
    b) Egypt
    c) Syria
    d) Jordan
    e) Kuwait

34. A researcher wanted to see if the tool he used still produced the same results when used more than once, what should he do?
    a) Known-groups technique
    b) Multitrait-multimethod matrix method
    c) Test-retest
    d) Coefficient alpha
    e) Split-half technique

35. A measurement error whose value varies randomly in measuring the same value of quantity in same conditions is :
    a) random error
    b) Selection bias
    c) Systematic error
    d) Information bias
    e) Randomisation

36. A group of two hundred people were entered into a test, half of them were previously exposed to a certain risk factor. Fifty of those exposed were diseased with a certain disease. And 25 people were diseased but unexposed what is the relative risk?
    a) 3
    b) 5
    c) ½
    d) 2
    e) ¾

37. Refer back to the previous questions what is the odds ratio?
    a) ¾
    b) 1/3

c) 16
d) 3
e) 2

38. Depending on the picture to the side, which statement is correct?
    a) The average price is nearly 50 thousand more in custom build than in standard build
    b) If patient doesn't have good money he should get the custom build bed.
    c) People tend to use custom build more.

Dependent Variable:Price

CustomBuild	Mean	Std. Deviation	N
No	94752.22	25365.646	90
Yes	144677.78	47578.626	27
Total	106273.50	38043.699	117

Just a resemblance question, you should be able to understand this table.

39. The Difference between experimental and analytical experiments:
    a) in experimental you can manipulate and control exposures but in analytical you can't.
    b) Experimental is concerned with agent, environment and host but analytical is concerned with person, place and time.
    c) Randomisation is present in one rather than the other
    d) Analytical is more advanced than experimental
    e) Analytical is stronger than experimental

40. A pharmaceutical company asked its researcher to conduct a research to see the effectiveness of a certain drug. The results of the study gave a χ^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 a statistically significant evidence that the drug is effective
    c) He's 99% confident that there is a 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

41. In the previous question, if the researcher's alpha was .01,what's the right statement?
    a) He's 95% confident that there's a statistically significant evidence that the drug is effective
    b) He's 95% confident that there's a 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.

42. The degree to which the results of a study are correct for the participants being studied, is the definition of:
    a) External validity
    b) Construct validity
    c) Face validity
    d) Content validity
    e) Internal validity

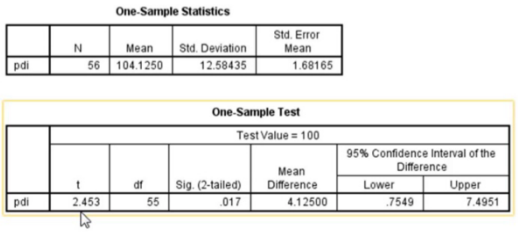
43. A researcher held an experiment where he had two groups of patients, he didn't randomise the groups . He gave only one of the groups a treatment he was studying. What model might he be following?
    a) Pretest-posttest control group
    b) Post test only control group
    c) Nonequivalent control group
    d) Crossover trial

e) Solomon four group

44. Which statement regarding reliability is correct?
    a) reliability is increased by increasing sample items
    b) The ability to generalise results is a part of reliability
    c) Stability resembles how much the instrument items are measuring the same attribute
    d) Equivalence is the extent to which scores are similar on two separate administrations of the same instrument
    e) A reliability coefficient of .86 indicates that 86% of variability in test scores is due to error and 14% due to true differences between examinees.

45. A research was held on babies to see if a vaccination was effective against a certain disease. After giving the vaccine to the babies they were sent home, and parents were asked to follow up with the babies and to return after two weeks. This study is:
    a) Experimental
    b) Cohort analytical
    c) Descriptive
    d) Case control analytical

46. What's the p value in the picture to the side?
    a) 1.68165
    b) 2.453
    c) 0.00
    d) 7.4951
    e) .017



One-Sample Statistics

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

One-Sample Test

	Test Value = 100					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
pdi	2.453	55	.017	4.12500	.7549	7.4951

1	b	**13**	e	**25**	a	**37**	d
2	a	**14**	d	**26**	b	**38**	a
3	c	**15**	c	**27**	e	**39**	a
4	b	**16**	d	**28**	c	**40**	a
5	c	**17**	e	**29**	b	**41**	d
6	a	**18**	a	**30**	b	**42**	e
7	e	**19**	a	**31**	a	**43**	c
8	a	**20**	b	**32**	c	**44**	a
9	c	**21**	e	**33**	d	**45**	a
10	a	**22**	c	**34**	c	**46**	e
11	c	**23**	b	**35**	a		
12	a	**24**	b	**36**	d		

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سيأتي الله بأيام ترضينا، لن يدوم ما بنا إلى الأبد...✨🫶