Questions L1

1. **Data is transformed to information by processing by:** a) Descriptive studies b) Analytical studies c) Statistical studies d) Experimental studies	A
2. **1st step in the 8 step model of research is:** a) Determine research problem. b) Write protocol. c) Construct tools of data collection. d) Processing data.	A
3. **All of the following are criteria of research objectives except:** a) Specific b) Achievable c) Realistic d) Expensive	D
4. **Using statistics to get idea about parameters is called** a) Sampling. b) Inference. c) Inclusion. d) Hypotheses.	B
5. **Case report is** a) An interventional study b) Prospective study c) Clinical trial d) Descriptive study	D

6. Regarding cross sectional studies all are true except: a) Relatively easy and quick b) Can estimate exposure proportions in population c) Can estimate disease specific incidence rate d) Good for generating hypothesis about the cause of disease	C
7. Type of study that looks for association between exposures and outcomes in population rather than in individuals is a) Case report b) Case series c) Ecological study d) Case control study	C
8. Type of design where both exposure and disease are determined simultaneously for each subject is : a) Case study b) Cross sectional study c) Case control study d) Cohort study	B
9. Study of incidence of cancer colon in relation to fat consumption of people based on already available data obtained from the entire population is called a) Cross sectional study b) Ecological study c) Case control study d) Experimental study	B
10. Which of the following is True about Cross-sectional study? a) Analyzes the occurrence of risk factors in patient and control groups. b) Examines both exposed and unexposed groups for long period. c) None of the members of the examined groups have the disease. d) Can estimate overall and specific disease prevalence rates.	D

11. Regarding cross-sectional studies all are true, EXCEPT: a) Relatively easy and quick , b) Can estimate exposure proportions in population c) Can estimate disease specific incidence rate d) Good for generating hypothesis about the cause of disease	C
12. In early 1981 an unprecedented number of cases of Kaposi's sarcoma were diagnosed in group of young homosexual men. This was noteworthy because previously his malignancy had been seen almost exclusively in the elderly and affected men and women equally. This stimulated further research to define an emerging disease that AIDS. What type of study this? a) Cross sectional b) Case report c) Case series d) Correlational study	C
13. A total 3500 patients with thyroid cancer are identified and surveyed by patients' interview with referral to past exposure to radiation. This study design most appropriately illustrates: a) Cross sectional study b) Case report c) Case series d) Correlational study	A
14. Descriptive study does not answer: a) What b) When c) Where d) Who	A

15. The careful detailed report the is given by clinicians to profiles a single patient's case called: a) Case report b) Case series c) Correlation study d) Cross-section study	A
16. In 1961, pulmonary embolism was detected in a 35-years, female after 5 years of using oral contraceptive pills. This phenomenon was considered interesting as pulmonary embolism usually occurs among old, post-menopausal women. This type of descriptive studies is called: a) Case-report b) Case series c) Correlation studies d) Cross sectional studies	A
17. Is used to estimate prevalence rate. a) Ecological b) Case-control c) Cross sectional d) Cohort	C
18. Snapshot studies is a term given to describe: a) Cross-sectional b) Cohort c) Longitudinal d) Case control	A
19. Follow up is required in which of the following: a) Longitudinal studies b) Case-control c) Case report d) Case series	A

20. Which of the following is known as prevalence study a) Case report b) Case series c) Correlation study d) Cross-section study e) Cohort study	D
21. During one week duration a pediatrician described 7 cases of microcephaly. All mothers reported prenatal infection with Zika virus. The type of this study is: a) An epidemic investigation b) Case series c) A correlation study d) A case report	B
22. which of the following is useful to non-fatal & chronic conditions & not suitable to study rare diseases? a) Case report b) Case series c) Correlation study d) Cross-section study e) Cohort study	D

Questions L2

1. **Which of the following is true about case-control study;** a) One type of descriptive studies. b) Can measure prevalence rate of disease. c) Allows the study of several risk factors. d) Best study to calculate incidence rate	**C**
2. **Residents of three villages with three different types of water supply were asked to participate in a study to identify typhoid carries because several cases had occurred in the recent years. Every person was present at the time of examination. The prevalence of carriers in each village was computed and compared. This study is:** a) Cross-sectional b) Case-control c) Retrospective cohort d) Prospective cohort	**A**
3. **Odds ration can be calculate from:** a) Case control study b) Descriptive study c) Cohort study d) Experimental study	**A**
4. **The association between low birth weight (LBW) and maternal smoking during pregnancy can be studied by obtaining smoking history from mothers with LBW infants and comparing in smoking histories of an equal number of mothers with normal birth weight infants. What type of study is this?** a) Prospective b) Cross sectional c) Case control d) Cohort study	**C**

5. **Odds ratio (an estimate of relative risk)** a) Can be calculated from Case control Study. b) Can be calculated from Cross-sectional study. c) Can be calculated from Cohort study. d) Can be calculated from Experimental study	**A**
6. **While investigating a point source epidemic, it was found that.120 students ate 4 different foods (meat burger, fried fish, steak & rice). The odds ratio was calculated for each one of these 4 foods. It was concluded that fish was not the cause of this epidemic because its odds ratio was:** a) 0.7 b) 1.2 c) 1.7 d) 3.0	**A**
7. **To determine an odds ratio one would have to perform which of the following studies:** a) cross-sectional study b) case-control study c) A randomized clinical trial study d) Cohort study	**B**
8. **In study on 500 cases of disease and 500 controls the suspected risk factor was found in 400 cases and 100 of the controls,. The incidence of disease in the person with the risk factors is:** a) 80% b) 40% c) 20% d) Cannot be computed from data given	**D**

9. As an epidemiologist you are asked to recommend the type of study appropriate to the needs of researchrs who would like to study the cause of rare form of sarcoma. They have discovered registry of this form of cancer and have access to the largest data base of patients with this form of cancer which unfortunately is only few years old. They have funding for only one year from the National Institutes of health and note the budget will be tight. What type of study design do you recommend? a) Prospective cohort. b) Retrospective cohort c) Cross sectional d) Experimental e) Case control	E
10. In an experiment aiming at associating between low birth weight of child and puerperal sepsis of pregnant woman, a group of women with puerperal sepsis are collected and compared with another group of healthy women, type of this study is called ..? a) Case control study b) Cohort study c) Cross sectional study d) All of the above	A
11. The study that proceeds from the effect to the cause is: a) Cohort b) Experimental c) Case-control d) Ecological	C
12. The most feasible design when outcome is rare is: a) Case-control b) Cohort c) Cross sectional d) Longitudinal	A

13. All of the following are sources of control except: a) General population b) Hospital controls c) Peers, friends d) Complicated cases	D
14. Increased exposure accompanies increased outcome in: a) oR=1 b) RR>1 c) oR>1 d) oR<1	C

Questions L3

1. Two groups of smokers and non-smokers were followed up for 20 years to study relationship between smoking and lung cancer. What are the risk measure that can be calculate from such type of studies? a) Incidence rate of lung cancer among smokers b) Incidence rate of lung cancer among non-smokers c) Relative risk d) All of the above	D
2. The incidence rate of lung cancer is 150/100000 person in certain year in community among smokers and 15/100000 person among non smokers in the same year. The relative risk for developing lung cancer among smokers compared to non-smokers is a) 5 b) 10 c) 30 d) 50	B
3. In longitudinal study 200 of 1200 participants were found to have coronary heart disease. Over the next year 150 participants were newly diagnosed as coronary heart disease, the incidence rate in the last year is a) 350/1000 b) 200/1200 c) 150/1000 d) 150/1200	C
4. Which of the following is false about cohort study? a) An analytic epidemiologic study design b) The investigator proceeds from exposure to disease c) Useful for examining rare exposure d) Optimal for study of rare disease	D

5. The association between hepatitis B infection and hepatocellular carcinoma can be assessed by follow up of group of population some of them are hepatitis. B positive and some of them are negative. What is the type of this study? a) Cross sectional b) Cohort c) Case control d) Randomized clinical trial	B
6. Disadvantages of cohort studies do not include a) They are efficient for evaluation of rare disease b) Expensive c) Take long time d) Involve large sample	A
7. The prospective from the analytical studies is a) Case control study b) Cross sectional study c) Cohort study d) Longitudinal study	C
15. The smoking history of pregnant women is taken in the antenatal period Mothers were followed up till delivery to correlate the smoking with the birth weight, this study would be an example of: a) Clinical trial b) Case Control study c) Cohort study d) Cross sectional study	C
16. Which of the following is False about Cohort study? a) Can examine multiple effects of a single exposure. b) The investigator proceeds from exposure to disease. c) Valuable for examining rare exposures. d) Optimal for study of rare diseases	D

17. Two groups of hepatitis B patient and non-hepatitis B persons were followed-up for 20 years to study relationship between hepatitis B and hepatic cancer. What is the risk measure that can't be calculated from this study? a) Relative risk b) Odds ratio c) Incidence rate of lung cancer among hepatitis B patients d) Incidence rate of hepatic cancer among non-hepatitis B persons	B
18. The incidence rate of cancer bladder is 100/1000 among males suffering from urinary Schistosomiasis in a certain year and locality and 10/1000 among males not suffering from Schistosomiasis in the same year and locality. The relative risk for developing cancer "bladder among urinary Schistosoma patients compared to normal is: a) 5 b) 10 c) 30 d) 50	B
19. If the exposure is rare, the following design is efficient: a) Case control b) Cohort c) Experimental d) Case series	B
20. The following is a very important source of bias in cohort study: a) Losses of follow up b) Expensive c) Methods can be standardized d) Study several outcomes	A

21. One of the following statements is true: a) Bias is any systematic error in the design, conduct or analysis of a study that can result in wrong results. b) Bias is a systematic error in the conduct and analysis only of a study that can result in wrong results c) Case-control studies are not liable to bias or mistakes. d) The participants in cohort have the outcome of interest to begin with.	A
22. A study carried out to assess the association between exposure to X-ray and development of leukemia by follow up of 3000 individuals: 1000 of them were exposed to x-ray. At the end of the study the total number of cases diagnosed to have leukemia was 100 cases, 60 of them were among cases exposed to X-ray. The calculated relative risk is: a) RR=3 b) RR=6 c) RR=9 d) RR=12	A
23. In a study of 500 cases of a disease and 500 controls, the suspected etiological factor is found in 400 of the cases and 100 of the controls. The incidence of disease in persons with the factor is: a) 80% b) 40% c) 20% d) Cannot be computed from data given.	D
24. In cohort study the outcome measure which best describes how much the studied disease resulted from the exposure: a) Relative risk b) Odds ratio c) Relative contribution d) Attributable risk	D

25. Relative Risk can be calculated from the following type of study: a) Case-control study b) Cohort study c) Clinical trials d) Preventive trials	B
26. Incidence among exposed minus incidence among non-exposed equals [(a/a+b)]- [c/(c+d)] and is termed: a) Relative risk b) Odds ratio c) Attributable risk d) Sensitivity	C
27. Relative Risk value = 5.6 resulted from a cohort study among students consuming fast food and subsequent development of overweight means that: a) No association, incidence rate of overweight is identical among consumers and nonconsumers of fast food. b) Positive association, incidence rate of overweight increasing by increasing consumption of fast food. c) Negative association, incidence rate of overweight decreases by increasing consumption of fast food. d) Prevalence rate of overweight among consumers of fast food is 56%.	B
28. A Relative Risk value =0.7 resulted from a study on the association between peptic ulcer and consumption of spicy food means that: a) No association, incidence of peptic ulcer rate is identical in eaters and non-eaters of spicy food b) Positive association& peptic ulcer rate increases by increase consumption of spicy food. c) Negative association and the non-eaters of spicy food have higher incidence of peptic ulcer.	C

Questions L5 Screening

1. **Which type of screening offered to all individuals, irrespective of the presence of particular risk to the disease?** a) High risk screening b) Clinical screening c) Multiphase screening d) Laboratory screening e) Mass screening	E
2. **Which of the following is characteristic of reliable test?** a) Cost effective test b) Give same values when repeated c) Least time consuming d) Non-painful test e) Precise and valid test	B
3. **Multiphasic screening referred to** a) Application of two or more tests at the same time. b) Applied to wide geographical area c) Done in determined time period d) Screening tests done irrespective they have risk or not e) Tests applied on high risk individuals	A
4. **For the calculation of negative predicted value of screening test, the Numerator (البسط) is comprised of:** a) True negatives+ false negatives b) Total positives c) True negative d) True negatives+ false positive	C

5. A new test was developed for screening blood donors for HIV, a group of the non-diseased was tested positive. This type of error is called: A. True positive B. False positive C. True negative D. False neg	B
6. On testing the results of ultrasonography as a screening test for diagnosis of cancer kidney, a study was performed on 1000 cases of high risk group of which 50 cases were eventually determined by CT to have cancer and 100 were determined by ultrasonography to be positive among them 40 were also confirmed by CT. The calculate positive predictive value is: a) 20% b) 40% c) 60% d) 80%	B
7. The ability of the screening test to identify correctly those who have the disease is termed a) Sensitivity b) Specificity c) Reliability d) Predictive value	A
8. Compared to glucose tolerance test, glycosuria as a screening test to detect diabetes mellitus has: a) Low validity b) High validity c) Equal validity d) The comparison is not valid	A

9. On assessing a new screening test for diagnosis of breast cancer, a study was performed on 5000 females, results were shown in the following table: **Screening test / True diagnosis: Diseased / Not diseased / Totals** Positive: 850 / 150 / **1000** Negative: 350 / 3650 / 4000 Totals: **1200** / 3800 / 5000 ▪ **The calculated negative predicted value of this screening test is:** a) 850/1200 b) 365/400 c) 365/380 d) 850/1000	B
10. Antenatal care and screening of school students are examples of: a) Mass screening b) High risk screening c) Multiphase / Multipurpose screening d) Random screening	C
11. When the test is repeated under standard conditions and always gives the same results this is called: a) Predictive value b) Sensitivity c) Reliability d) Validity	C
12. In screening test: reliability, repeatability validity and sensitivity which pair is analogues? a) Validity is analogous to repeatability b) Reliability is analogous to repeatability c) Validity is analogous to sensitivity d) Validity is analogous to reliability	B

13. For the calculation of negative predicted value of screening test, the denominator (المقام) is comprised of:

a) True negatives+ false negatives

b) Total positives

c) True negative

d) True negatives+ false positive

A

14. Assuming that mammography has a sensitivity of 90% and a specificity of 98% and that consecutive tests are independent, what is the probability that a woman with breast cancer will have a negative yearly screening mammogram for two consecutive years?

a) 1/10

b) 2/10

c) 4/10

d) 1/100

e) 4/100

D

طالما قالك سنتين ورا بعض هتحسب النسبة ع سنة عادي جدا وبعدين تربعها

15. An investigator evaluated 100 patients suffering from major depression as confirmed by the attending psychiatrist. The results were as follows:

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	**12**	42	54
Negative	28	18	46
Totals	40	60	100

C

- **What will be the sensitivity?**

a) 40%

b) 60%

c) 30%

d) 54%

e) 70%

16. The ability of screening test to identify those who do not have the disease is called a) Sensitivity b) Specificity c) Positive predictive value d) Negative predictive value	B
17. Sensitivity of screening test means: a) The ability of the test to give the same results when repeated in standard conditions b) The ability of the test to identify correctly those who have the disease c) The ability of the test to identify correctly those who do not have the disease d) None of the above	B
18. You are using a new influenza screening test. You find a study that evaluated 1000 patients with this test 400 of them had the disease. Three hundred of those had +ve tests, and 100 of those had a -ve tests. Of the 600 that did not have the disease, 200 had +ve test, and 400 had -ve tests .What is the +ve predictive value of this test? a) 50% b) 60% c) 66% d) 75%	B
19. You are reading a population study that reports 90% of people with lung cancer are smokers. Thirty percent of the people without lung cancer are also smokers. Given information, what is the specificity using smoking as a predictors of lung cancer? a) 10% b) 30% c) 40% d) 70% e) 90% هتلاقي تفسير الحل ع الجروب	D

20. On assessing a new screening test for diagnosis of breast cancer , a study was performed on 5000 females , results were shown in the following table:

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	850	150	**1000**
Negative	350	3650	4000
Totals	**1200**	3800	5000

- **The calculated negative predicted value of this screening test is:**

  a) 850/1200

  b) 365/400

  c) 365/380

  d) 850/1000

B

21. **When the test is repeated under standard conditions and always give the same result, this is called:**

a) Predictive value.

b) Sensitivity.

c) Reliability.

d) Validity

C

22. **Reliable test is the test characterized by:**

a) Least time consuming

b) Cost effective test

c) Give same values when repeated

d) Not false test

C

23. **Sensitivity of a screening test is:**

a) Ability of the test to identify correctly those having the disease i.e. it gives few false positive results.

b) Ability of the test to identify correctly those who do not have the disease.

c) Calculated from the formula (true positive/ all positives)

d) Calculated from the formula (true positive/ all with disease)

D

24. Screening for disease is:

a) Done to investigate apparently healthy individuals

b) Done to diagnose a disease

c) Used as a basis for treatment

d) Used on an individual basis

المقارنة دي مهمة جدا لازم تكون عارفها

A

25. On assessing a new screening test for diagnosis of breast cancer, a study was performed on 2500 females, results of the new screening test were shown in the following table

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	750	250	**1000**
Negative	50	1450	1500
Totals	800	1700	2500

- **The calculated sensitivity of this screening test is:**

a) 75/100

b) 145/150

c) 170/250

d) 75/80

D

26. A rare disorder of amino acid metabolism causes severe mental retardation if not treated. If this disease is detected soon after birth a restrictive diet prevents mental abnormalities which of the following characteristic would be the most desirable in a screening test for this disease?

a) High specificity

b) High sensitivity

c) High positive predictive value

d) High negative predictive value

B

27. Which of the following diseases cannot be target for screening program

a) Influenza

b) Cancer breast

c) HBV

d) Phenylketonuria

A

28.. From the following tables

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	9	18	**27**
Negative	1	72	73
Totals	10	90	100

- **The positive predictive value of this screening test is**

a) 72%

b) 33%

c) 50%

d) 90%

B

29.In cross sectional study to calculate validity of tuberculin test in screening of pulmonary TB, the results were as follows

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	294	21	315
Negative	6	679	685
Totals	300	700	**1000**

- **The sensitivity of tuberculin is:**

a) 679/(679 +21)

b) 294/(300 +6)

c) 294/(294 +6)

d) 679/(700 +21)

C

30.You are using new influenza screening test you find study that evaluated 1000, 400 had the disease, 300 of them has +ve test and 100 of them has a -ve test. Those who don't have the disease 200 had +ve test and 400 had-ve tests what is the +ve predictive value

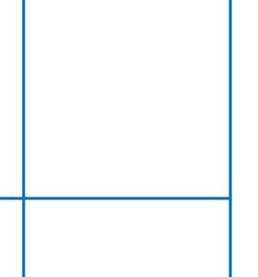
a) 50%

b) 60%

c) 66%

d) 75%

B



31. **The RAC test achieves widespread acceptance. However, with improvements in hygiene, the prevalence of cholera gradually falls from 35% to 5%of hospitalized diarrhea patients. Which statement about the effect of this fall in prevalence is true?**

a) The change in prevalence will reduce predictive value of a negative result.

b) The predictive value of a positive result will decline.

c) The specificity of the test is likely to decline

d) The specificity of the test will increase at the expense of its sensitivity

B

32. **On assessing a new screening test for diagnosis of breast cancer, a study performed on 2500 females, results of the new screening were shown in the following table:**

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	750	250	1000
Negative	50	1450	1500
Totals	800	1700	2500

- **The calculated sensitivity of the test is:**

a) 75/100

b) 145/150

c) 170/250

d) 75/80

D

33. **on assessing a new screening test for diagnosis of breast cancer, a study was performed on 3000 females, results were shown in the following table:**

Screening test	True diagnosis		Totals
	Diseased	Not diseased	
Positive	750	250	**1000**
Negative	50	1950	2000
Totals	800	2200	3000

- **The calculated positive predicted value of this screening test is:**

a) 75/80

b) 195/220

c) 195/200

d) 75/100

D

Questions L4 Experimental Study

1. A computer generates 100 random number and 100 random people whose names correspond with the number in the list are chosen what is the type of sampling technique a) Simple random sample b) Systematic random sample c) Cluster sample d) Multistage random sample e) Stratified random sample	A
2. A researcher wishes to investigate covid 19 immunization coverage in Egypt, The best sampling technique is : a) Simple random sample b) Systematic random sample c) Cluster sample d) Multistage random sample e) Stratified random sample	D
3. Number of covid 19 vaccine does for each health care workers in a set of data is considered. a) Quantitative discrete b) Qualitative variable c) Quantitative continuous d) Nominal variable e) Ordinal variable	A
4. Hemoglobin variable in blood coded as (anemic & normal) was examined in two groups these variable can be presented in tables by : a) Mean and standard deviation b) Median and range c) Variance d) Ratio **e)** Number and percent	E

5. The unit of sampling is group of individual's in a) Simple random sample b) Cluster sample c) Stratified random sample d) Quota sample	B
6. All of the following are types of the probability samples except a) Quota sample b) Simple random sample c) Cluster sample d) Systematic sample	A
7. Type of sample used for national study is a) Simple random sample b) Cluster sample c) Systemic sample d) Multistage sample	D
8. The following is not a probability sample: a) Systematic random sample b) Cluster sample c) Multistage sample d) Quota sample	D
9. The measure of central tendency that can be used for all types of variables is: a) Mean b) Median c) Mode d) Mean deviation	C

10. As a measure for central tendency: a) Mean cannot be used when data are normally distributed. b) Mean can be used when data are skewed. c) Median can be used when the data are skewed d) Median is common central tendency measure when the data are normally distributed	C
11. If the following value "0,3,7,9,4,10,70,69" is a set of data, the best measure of central tendency is: a) Mean b) Median c) Mode d) Range e) SD	B
12. 11 child: 5 of them have a weight more than 2.5 KG, 5 of them have a weight less than 2.5 KG , then 2.5KG resembles what ? a) Mode b) Median c) Mean d) Range	B
13. 18.The type of variable of blood pressure of patients admitted to the ICU which is classified as: normotensive, hypertensive and hypotensive is considered: a) Nominal b) Ordinal c) Matric d) Discrete e) Continuous	B

14. The best sampling technique applied when studying a heterogenous population is a) Simple random sample b) Systemic random sample c) Cluster sample d) Stratified random sample	D
15. To investigate poliomyelitis immunization coverage in Egypt, the best sampling technique is: a) Cluster b) Multistage random sample c) Simple random sample d) Purposive sample e) Systematic random sample	B
16. Which of the following techniques yields a simple random sample? a) Choosing volunteers from an introductory psychology class to participate b) Listing the individuals by ethnic group and choosing a proportion from within each ethnic group at random. c) Numbering all the elements of a sampling frame and then using a random number table to pick cases from the table. d) Randomly selecting schools, and then sampling everyone within the school.	C
17. Select all of the following statements which you believe to be true, A truly random sample of the 4th year medical students would be obtained by: a) Selecting an individual from every fourth house on a street. b) Selecting every individual with a surname beginning with the letter 'S' c) Selecting every 20th individual from a list of patients registered with a GP. d) Allocating each individual a unique number and using a computer to randomly generate numbers for selection. e) Closing eyes and sticking a pin into a telephone directory.	D

18. Determining the sample interval, randomly selecting the 1st number, and including each 5th element in your sample are the steps for which form of sampling? a) Simple Random Sampling b) Stratified Random Sampling c) Systematic Sampling d) Cluster sampling	C
19. Random sampling or probability sampling includes all the following techniques, except: a) Simple random sampling b) Stratified random sampling c) Cluster sampling d) Purposive Sampling	D
20. In a community of 3000 people, 80% are Hindus, 10% Muslims, 5% Christians, and 5% others. To select a sample of 300 people to analyze food habits, ideal sampling method would be: a) Simple random sampling b) Stratified random sampling c) Systematic random sampling d) Inverse sampling	B
21. In nine families surveyed, the numbers of children per family were 4, 6, 2, 2, 4, 3, 2, 1, and 7. The mean, median, and mode numbers of children per family are, respectively, a) 3.4, 2, 3 b) 3, 3.4, 2 c) 3, 3, 2 d) 2, 3.5, 3 e) 3.4, 3, 2	E

22. All the following are measures of central tendency, except: a) Mean b) Median c) Mode d) Variance	D
23. Which measure of central tendency is Influenced by extreme scores and skewed distributions? a) Mean b) Median c) Mode d) Range	A
24. Arrangement of values in a serial order is to determine: a) Mean b) Mode c) Median d) Range	C
25. Calculate the median of these ten values. 1.9. 1.9, 1.9, 1.9, 2.2, 2.3, 2.4, 2.4, 2.4, 2.4 a) 1.9 b) 2.1 c) 2.25 d) 2	C
26. A measure of dispersion of a set of observations in which it is calculated by the difference between the highest and lowest values produced is called: a) Standard Deviation b) Variance c) Range d) Mode	C

27. A statistic which describes the interval of scores bounded by the 25th and 75th percentile ranks is: a) Inter quartile range b) Confidence Interval c) Standard Deviation d) Variance	A
28. The Median value is the: a) 25th percentile b) 50th percentile c) 75th percentile d) 95th percentile	B
29. The square of the standard deviation is the: a) Range b) Standard Error c) Z-score d) Variance	D
30. Sum of all squares of deviation from the mean is called: a) Mean b) Mode c) Variance d) Standard Error	C
31. What is not true about range? a) Range equals to the difference between highest and lowest scores b) Range is inclusive of the two extreme scores c) Range is a measure of dispersion d) Range equals to the standard error of mean	D

32. Which of the following terms means the distance between the 25th and 75th percentiles, used to Describe the dispersion of values? a) Confidence Interval. b) F distribution. c) Interquartile Range. d) Normal Range.	C
33. Which of the following terms means the spread or dispersion of data (the positive square root of the variance)? a) Standard Deviation (SD). b) Standard Error (SE). c) Standard Error of the estimate. d) Standard Error of the Mean (SEM).	A
34. The best summary measure for body mass index variable in a set of cardiac patients when the variable is normally distributed is a) Median b) Mean c) Mode d) Frequency **e)** Percentage	B

Questions L7 Data Presentation

1. You are preparing a report to present mortality & morbidity from covid 19 according to age group (<20 ,20:40,> 40) during the last 12 months which group best describe these data a) Simple par chart b) Multiple par chart c) Frequency polygon d) Histogram e) Pie chart	B
2. Serum cholesterol level in a group of young adults was found to be approximately normally distributed with mean level 170 mg/dl and standard deviation 8mg/dl which of the following intervals include approximately 68% of Serum cholesterol in these group? a) 160 - 180 mg /dl b) 162 - 178 mg /dl c) 150 - 190 mg /dl d) 154 - 186 mg /dl e) 140 - 200 mg /dl	B
3. Graph showing the relation between serum calcium and bone mineral density variable is called. a) Scatter diagram b) Frequency polygon c) Picture chart d) Histogram e) Pie chart	A
4. Which of the following data is best described by histogram? a) Hight b) Gender c) Type of TTT d) Severity of pain	A

5. All of the following are types of the bar charts except a) Simple bar charts b) Multiple bar charts c) Circular bar charts d) Component bar charts	C
6. The histogram is the graphical presentation of the following types of variables a) Nominal b) Discrete c) Continuous d) Categorical	C
7. An analysis of anemia among a group of patients revealed that 10% were normal, 40% were mild anemic, 30% moderate and 20% severe anemic. These data would best be represented graphically by: a) Normal curve distribution. b) Pie chart. c) Histogram d) Multiple bar chart	B
8. The most common types of graphical presentation for discrete data are: a) Histogram, smooth curve b) Bar-chart, frequency polygon. c) Pie chart, smooth curve. d) Bar chart, Pie chart	D
9. The graph that can be used to plot levels of blood pressure that are divided into intervals mmHg (70-74-75-79,80-84,etc..) is: a) Pie chart b) Bar chart c) Line graph d) Histogram	D

10. An analysis of malnutrition among a group of people revealed that 10% were normal, 50% were anemic, 30% had scurvy and 10% had osteoporosis. From the following select the best graph to represent these data: a) Normal distribution curve b) Histogram c) Pie chart d) None of the above	C
11. In simple frequency table, the number of observation in a particular class is called: a) Width of the class b) Frequency c) Class interval d) Class mark	B
12. In a normal distribution curve, if mean equals 50 & SD = 5 what is the correct answer among choices ? a) 95% from 40 to 60. b) 100% from 40 to 60 c) 95% from 20 to 40 d) 80% from 40 to 60	A
13. Which of the following figures would be appropriate for illustrating the relationship between gender and blood group in a sample of patients? a) Simple bar chart. b) Pie chart c) Histogram d) Polygon e) Component bar chart	E

14. The arithmetic mean of a set of values is: a) A particular type of dispersion b) Always greater than the median c) Always smaller than the median d) Equal to the median if the distribution of the data is symmetrical e) A useful summary measure of location if the data are skewed to the right	D
15. What "branch" of statistics uses numerical observations and incorporates them into an organized and informative summary of the data? a) Sample b) Population c) Inferential d) Descriptive	D
16. Is the science of using a sample or measurements to make generalizations about the important aspects of a population of measurements? (مكتوب بطريقة رخمة فاعرف اجابته تحسبا) a) Statistical control b) Descriptive statistics c) Random sampling d) Statistical inference	C
17. The proportion of observations fall above the median is: a) 68% b) 50% c) 75% d) 95%	B
18. Which of the following is NOT a characteristic of normal distribution? a) Symmetric b) Bell-shaped c) Mean = Median = Mode d) None of the above.	D

19. In a negatively skewed distribution, the mean generally falls to: a) The left of the median and the median usually lies to the left of the mode. b) The right of the median and the median usually lies to the right of the mode. c) The middle of median and mode. d) The center of the distribution.	A
20. Which statement about normal distribution is FALSE? a) 50 percent of the observations fall within one standard deviation of the mean. b) 68 percent of the observations fall within one standard deviation of the mean. c) 95 percent of observation falls within 2 standard deviations. d) 99.7 percent of observations fall within 3 standard deviations of the mean.	A
21. The listed observations- 1,2,3,4,100, suggest the distribution: a) Is positively skewed. b) Is negatively skewed. c) Has zero skewness. d) Is left-skewed.	A
22. In a population of 100 females in the age group of 15-45, the mean systolic BP was found to be 120. In a normal curve distribution, the number of people who would have an average BP above 120 will be: a) 25 b) 50 c) 75 d) 95	B

23. The difference between a histogram and a bar chart is that: a) The histogram reflects qualitative data while the bar chart represents quantitative data. b) The adjacent rectangles/bars in a histogram have a gap while those for a bar chart do not. c) The histogram reflects both qualitative and quantitative data while the bar chart represents only qualitative data. d) The adjacent rectangles/bars in a bar chart have a gap while those for a histogram do not. e) None of the above	D
24. State whether the data reflecting the heights of individuals in the general population are likely to be: a) Skewed to the right. b) Skewed to the left. c) Symmetrical. d) Positively skewed.	C
25. If a distribution is skewed to the left, then it is : a) Negatively skewed. b) Positively skewed. c) Symmetrically skewed. d) Symmetrical.	A
26. The interpretation of p value = 0.06 a) Statistically non-significant result, null hypothesis is accepted. b) Statistically non-significant result, null hypothesis is rejected. c) significant result, null hypothesis is accepted. d) significant result, null hypothesis is rejected. e) Study hypothesis is rejected	A

27. As investigator want to study association between maternal intake of iron supplements (yes or no) and incidence of low birth weight (<2500, >2500 gms). He collects relevant data from 100 pregnant women to as to the status of usage of iron supplements and the status of low birth weight in their newborns. The appropriate statistical test of hypothesis advised in this situation is a) Paired t test b) Unpaired or independent t test c) Analysis of variance d) Chi square test **e)** Paired t test	D

Questions L4 Experimental Study

1. **Regarding phases of testing new agent, one of the following is true:** a. Phase 1: evaluate its safety, determine a safe dosage range, & identify side effects. b. Phase 2: establish the efficacy of the drug, usually against a placebo. c. Phase 3: The experimental treatment is given to a larger group of people (100–300) d. Phase 4: Post-marketing studies.	D
2. **The type of the study that can actually prove causation is:** a- Cohort study. b- Case control study. c- Experimental study. d- Cross sectional study e- Case report	C
3. **The first step in any experimental design is:** a- Follow up. b- Selection of study population. c- Getting informed consent. d- Allocation of subjects to experimental and control group e- Analyze the results	B
4. **The classical phase of a clinical trial which is performed on patients and aim to assess efficacy and safety is:** a) Phase I b) Phase II c) Phase III d) Phase IV **اكدنا ع كلمة كلاسيكل في الشرح لان بعدها هتاخد موافقة والدواء يتعرض في السوق او لا**	oC

5. **Classical phase on testing drug in human aims to assess** a) Efficacy b) Pharmacokinetic c) Effectiveness d) Long term side effects e) Lethal dose (LD50)	C
6. **Knowledge about teratogenic effects & Lethal dose of a new drug should be provided in which phase of a clinical trial?** a) Phase 0 (preclinical) b) Phase I c) Phase III d) Phase IV	A
7. **In a double blind study:** a) subjects are unware of whether they are in the experimental or control group study b) subjects and the observer are unaware of the subjects group allocation c) Subjects, the observer and data analyst are unaware subjects group allocation. d) Non of the above	B
8. **Which of the following characterizes placebo in RCT:** a) pharmacologically inert b) not identical in appearance to the active drug c) is ethical to use when a known effective drug exists d) None of the above	A
9. **In preclinical trials:** a) we get knowledge about the safety and biological activity of the treatment b) In vitro documentation is required c) The next stage is animal studies d) All of the above	D

10. Randomization means: a) Characterizes experimental study b) Each subject has equal chance of being assigned to any group in the study c) All groups in a study are similar in all characteristics d) Selection bias is avoided e) All of the above	E
11. The group that receives the experimental treatment is the …… a) Independent group b) Participant group c) Control group d) Standard group e) Experimental group	E
12. In a triple blind study: a) Subjects are unware of whether they are in the experimental or control group study b) Subjects and the observer are unaware of the subjects group allocation c) Subjects, the observer and data analyst are unaware subjects group allocation. d) Non of the above	C
13. In the study of the cause of a disease the essential difference between an experimental study and observational study is that in the experimental investigation: a) study is prospective b) study is retrospective c) The study and control groups are of equal size d) The study and control groups are selected on the basis of history of exposure to suspected casual factor e) The investigators determine randomely who is and who is not exposed to the suspected causal factor	E

14. **The following points should be taken in consideration in the design of an experiment:** a) Study subjects should be matched in all variables except one under investigation b) Randomization should be followed in assigning ttt to the experimental unit c) Results should be compared with control group d) All of the above	**D**
15. **In the study of the cause of a disease the, essential difference between an experimental study and observational study is that in the experimental investigation:** a) study is prospective b) study is retrospective c) The study and control groups are of equal size d) The study and control groups are selected on the basis of history of exposure to suspected casual factor e) The investigators determine randomely who is and who is not exposed to the suspected causal factor.	**E**

Questions L8 Mortality Statistics

1. 566 persons are diagnosed with a certain disease, 17 of them died calculate case fatality rate: a) 4% b) 3% c) 25% d) 1%	B
2. In an outbreak of cholera in a village of 2000 population, 20 cases have occurred and 5 died. Case fatality rate is; a) 1% b) 25% c) 5% d) 0.25%	B
3. The most important cause of increased post neonatal mortality rate is: a) Prematurity b) Infections c) Birth injuries d) Nutritional deficiencies (مش عليك بس اعرف ان اشهر سبب في السن دا هو العدوي)	B
4. Deaths in the first 28 days of life divided by the number of live births in the same year & locality is termed: a) Postneonatal mortality rate b) Perinatal mortality rate c) Neonatal mortality rate d) Infant mortality rate	C

5. The ministry of health had reported 9000 ischemic heart disease during the year 2010 in Egypt, one expressing this number of deaths against total number of deaths in Egypt in this year rate is termed: a) Crude death rate b) Age specific death rate c) Cause specific death rate d) Proportionate mortality rat	D
6. In the year 2012 is certain village the health center recorded 100 cases of acute diarrhea, the recorded deaths among these cases were 5 deaths. The case fatality rate of diarrhea in this village was a) 10% b) 5% c) 2% d) 1%	B
7. All the following is causes of neonatal mortality except a) Prematurity b) Congenital malformations c) ABO incompatibly d) Birth injuries	C
8. The denominator of cause specific death rate is a) Number of deaths of particular disease in same year and locality b) Number of reported cases of disease in same year and locality c) Number of mid year estimated population in same year and locality d) Number of total deaths in the same year and locality.	C
9. The rate which its denominator is total population a) Crude death rate. b) Maternal mortality rate. c) Infant mortality rate. d) Case fatality rate	A

10. The percent of number of deaths due to specific disease to the total deaths in a specific year and locality is known as: a) cause specific death rate b) Case fatality rate . c) Proportional mortality rate d) Prevalence rate	C
11. Which is considered an index of the killing power of the disease: a) Case- fatality rate b) Proportional mortality rate c) Cause specific mortality rate d) Crude mortality rate	A
12. The case-fatality rate for an epidemic of hepatitis A with 600 affected cases and 3 deaths of these cases is: a) 0.005% b) 0.05% c) 5% d) 50% e) 0.5%	E