

King Saud University

College of Applied Medical Sciences

Community Health Sciences

CHS 334 Epidemiology 1

Final Exam

Second Semester, 1433 – 1434 H

**Student name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**40**

**Student number:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Question one: choose the correct answer for each question ( 12 marks)**

1. **Which of the following is incorrect?**
2. Sensitivity= a / a + c X 100
3. Specificity= a / b + d X 100
4. Positive predictive value= a / a + b X 100
5. Negative predictive value= d / c + d X 100
6. **A systematic method for continuous monitoring of disease in population, in order to be able to detect changes in disease patterns and then control them is:**
7. Probability
8. Screening
9. Prevalence
10. Surveillance
11. **In epidemiology research, if relative risk is greater than (one), this indicates the following:**
12. There is no relation between the exposure and the disease.
13. Indicates an increased risk among those exposed to the factor.
14. one means there is decrease risk among those exposed to the factor
15. None of the above
16. **The criteria for validity of a screening test is:**
17. Accuracy
18. Predictably
19. Sensitivity and specificity
20. Cost effectiveness
21. **All are true about case control study, except:**
22. Quick results
23. Proceeds from effect ( disease) to cause
24. Very expensive
25. Measures odds ratio
26. **Relative risk can be obtained from:**
27. Case study
28. Cohort study
29. Case control study
30. Cross-sectional study
31. **Calculate the odds ratio:**

|  |  |  |
| --- | --- | --- |
|  | **Diseased** | **Non-diseased** |
| **Positive** | **30** | **20** |
| **Negative** | **20** | **30** |

1. 0.44
2. 1.5
3. 0.8
4. 2.25
5. **Specificity of a screening test is the ability to:**
6. Correctly identify those having the disease
7. Be done many times in a row
8. Identify confounding factors
9. Correctly identify those not having the disease
10. **Which of the following study design is a descriptive study?**
11. Cross sectional
12. Case control
13. Cohort
14. Experimental
15. **Which study design is the best for studying rare diseases?**
16. Cross sectional
17. Case control
18. Cohort
19. Experimental
20. **Which of the following is an example of a type of analytical epidemiologic study?**
21. Case control study
22. Case reports
23. Case series
24. Cross sectional
25. **Selective screening is:**
26. The proportion of people screened positive by a test and actually have the disease.
27. The screening of people who are at risk of a disease
28. Screening for all individuals in the community
29. All of the Above

**Question two: State whether false (F) or true (T)**  **(10 marks)**

1. The sensitivity of a test is defined as the percentage of persons without the disease of interest who have negative test results. ( )
2. “Elisa” is one of the diagnostic tests for tuberculosis. ( )

1. Cross-sectional studies are suitable for rare diseases. ( )
2. Correlation coefficient (+ 0.4) means strong positive correlation between exposure and disease . ( )
3. In correlation study, analysis is at the level of an entire population rather than at the individual level. ( )
4. In case control study, the exposure and disease are assessed simultaneously. ( )
5. Both exposure and outcome have occurred before the start of cohort study. ( )
6. Case control study is an observational epidemiological study in which subjects are selected on the basis of whether they have the condition or free from the condition . ( )
7. When number of cases is below 50, one control must be selected for each case. ( )
8. When Odd's ratio equals one, this means that there is no relation between the exposure factor and the disease. ( )
9. In cohort study, study proceeds forwards from cause to effect. ( )
10. In internal comparison, a single cohort is selected, members are classified into several groups before development of disease. ( )
11. The relative risk ratio (RR) measures the strength of association between the suspected cause and the effects in case control study. ( )
12. Passive data collection means that health officer from the districts or other higher level regularly visits the hospitals, primary health care centers or clinics to gather information about the disease under surveillance. ( )
13. Completeness of surveillance is the percentage of reports received in time in relation to the targeted number of reports that should be received. ( )
14. Human experimental studies are essential to investigate diseases that can be reproduced in animals. ( )
15. The goal of screening is to identify affected individuals after the onset of symptoms. ( )
16. Early detection of communicable diseases will interrupt the chain of its transmission to other susceptible hosts. ( )
17. Screening is equated with periodic examination, case finding or diagnosis. ( )
18. Screening test is different from diagnostic test in all cases. ( )

**Question three: Fill in the table below with acomparison between screening and diagnostic tests (4 marks)**

|  |  |
| --- | --- |
| **Screening tests** | **Diagnostic tests** |
|  |  |
|  |  |
|  |  |
|  |  |

**Question four: What is scientific term?** **(6 marks)**

1. Factors other than the studied factor (exposure) that disturb relation between the studied exposure and disease.

( )

1. Percentage of persons without the disease of interest who have negative test results. ( )
2. Study of a group of individuals defined on the basis of the presence or absence of exposure to a suspected risk factor for a disease. ( )
3. Application of the screening program to the whole population or population subgroups as adults, school children, industrial workers. ( )
4. Percentage of persons with negative test results who actually don’t have the disease of interest. ( )
5. Percentage of persons with the disease of interest who have positive test results. ( )

**Question five: complete the following questions( 8 marks)**

1. The following 2x2 table is a golden standard “truth” of a Pap smear screening of a group of women

|  |  |  |  |
| --- | --- | --- | --- |
| Screening test  (Pap smear) | Diagnostic test (biopsy) | | Total |
| Cancer | No cancer |
| Positive | 132 (a) | 985 (b) | 1,117 (a +b) |
| Negative | 47 © | 62,295 (d) | 62,342 (c+d) |
| Total | 179 (a+c) | 63,280 (b+d) | 63,459 |

1. **Calculate the sensitivity and specificity of this screening test**
2. **Calculate the positive and negative predictive values**
3. A group of male individuals were classified according to their smoking habit into smokers (n=360) and non-smokers (n=360). The two groups were similar in all other aspects as age, education, and social class. They were followed up for ten-year period. Hypertension was detected among 18 of the smokers and among 2 of non-smokers.
4. **What is the type of study?**
5. **Tabulate the previous data.**
6. **Draw the flow chart.**
7. **Calculate possible rates.**
8. **Analyze and interpret the results.**

**Best wishes**