SCIENCEOLYMPIAD
Exploring the World of Science

Disease Detectives Test

Produced by duPont Manual High School

Test Length: 50 minutes

Name(s): _____

School: _____

Score: _____/ 141

Directions: You will be given 50 minutes to complete the exam.
There is no penalty for guessing.
Work and units are required for any question involving calculation.
Round answers to the hundredth if necessary.
You are allowed   **one** sheet 8.5" x 11" of notes.
two non-programming non-graphing calculators

Part 1 - Definitions, Fill In The Blank

1. _____ : The systematic, ongoing collection, analysis, interpretation, and dissemination of health data.

2. _____ : A living organism that transmits a pathogen, usually causing disease.

3. _____ : An epidemic occurring over a very wide area (several countries or continents), affecting a large proportion of the population.

4. _____ : Any substance foreign to the body that evokes an immune response either alone or after forming a complex with a larger molecule, and that is capable of binding with a product of the immune response.

5. The birth rate can also be referred to as _____.

6. _____ : A regularly occurring disease in one location over time, whose appearance can be predicted

7. _____ : Period of time between exposure and onset of disease

8. _____ : Resistance to an infectious agent, or the low probability of contracting a disease, as a result of the majority of the population being immune

9. _____ : An inanimate vehicle for transmission

10. _____ : Infectious agent composed solely of protein material; misfolded proteins capable of transmitting disease

11. _____ : Immunity from birth

12. _____ : Causative microbial organism with the ability to cause disease or illness in a host

13. _____ : An estimation of a value based off 2 known values in a sequence of values

14. _____ : Disease transmissible from animals to humans

15. _____ : A site that harbors pathogenic organisms; a continuous source

16. _____ : Sudden increase in the number of occurrences of a disease or illness in time and space

Part 2 - Classify the following as bacterial, viral, fungal, prion, parasite, or other/unknown.

1. Influenza
2. Anthrax
3. Cyclosporiasis
4. Chlamydia
5. Hepatitis
6. Creutzfeldt-Jakob disease
7. Rubella
8. Cholera
9. Listeriosis
10. Trichinosis
11. Typhoid Fever

Part 3 - Put these steps of an outbreak in order

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11.

a. Prepare for field work
b. Refine hypothesis and carry out additional studies
c. Communicate Findings
d. Verify the Diagnosis
e. Evaluate hypotheses
f. Define and Identify Cases
g. Establish the existence of an outbreak
h. Implement control and prevention measures
i. Develop hypotheses
j. Describe and Orient the Data

Part 4 - Chain of Infection - Fill in the 6 bubbles

Chain of Infection
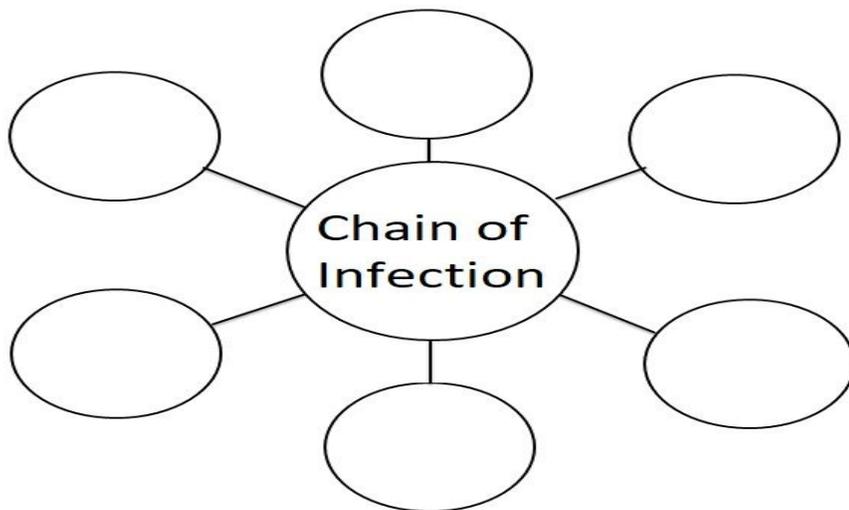
Part 5 - Case Definitions and more

1. What set of criteria is used to define and describe a case (form a case definition)?

    a. -

    b. -

    c. -

    d. -

    e. Write an example case definition (fictional or real):

2. What do we call the set of criteria used to establish the existence of a relationship between incidence and consequence: _____

    a. What are the criteria?   _____

    Briefly explain each.   _____

    _____

    _____

    _____

    _____

    _____

    _____

    _____

3. Define specificity:

4. Define sensitivity:

Part 6 - Triads

1. What are the components of the epidemiological triad, otherwise known as the infectious disease triad?

   _____

   _____

   _____

2. What are components of the descriptive epidemiology triad?

   _____

   _____

   _____

3. What are components of the chain of infection/transmission triad?

   _____

   _____

   _____

Part 7 - Surveillance

1. Define public health surveillance:

   _____

   _____

   _____

2. Name the Steps of Surveillance:
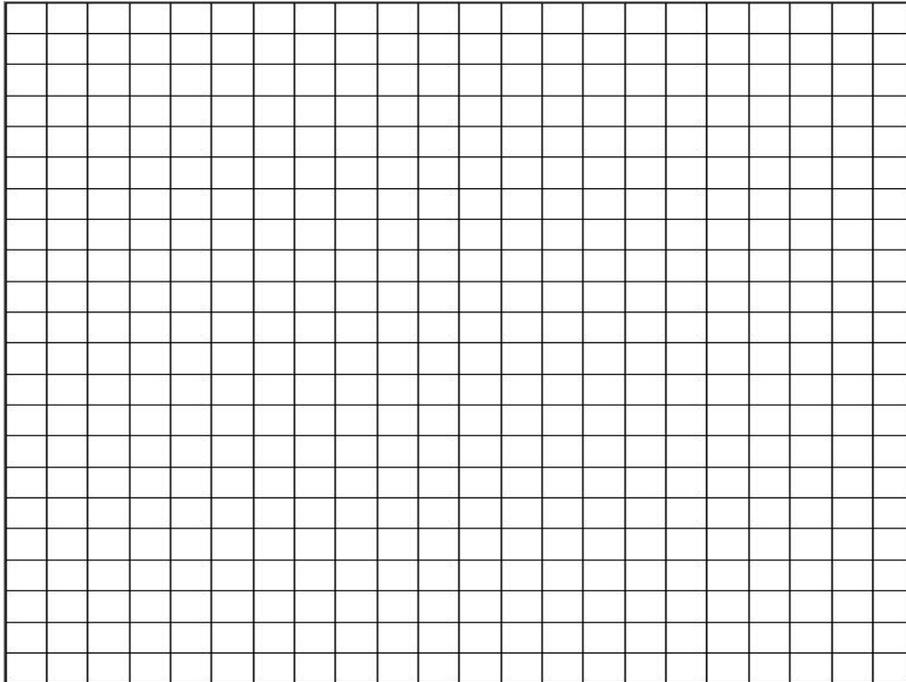
   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

Part 8 - Epicurves

Plot the following data as an epi-curve/graph on the following grid :

Influenza Cases	
January 1	2
January 2	1
January 4	4
January 6	7
January 7	4
January 9	2
January 10	8
January 11	15
January 12	6
January 15	2
January 16	1

1. Grid:

2. What type of epi-curve is it? What does this indicate about this outbreak or disease?

_____

_____

_____