DISEASE DETECTIVES **Augusta State University 2005 Regional**

Participants: _____ _____

Directions: The numbers in parenthesis indicates the values of the answers.

1. (11) A group of people developed a variety of intestinal problems a day after attending the picnic. The various foods they ate appear below.

Sickness among people eating various foods

Food Consumed	Number eating this food	Number developing symptoms
Green salad and sliced chicken	100	73
Noodles and black beans	50	21
Noodles and egg salad	80	24
Egg salad and sliced chicken	40	0

a. What food is the most likely source of the problems? (2)
Green salad (not sliced chicken)

b. Which food, noodles and beans or noodles and egg salad had the greatest percentage of people getting sick? (1)
Noodles and black beans (42% vs 30% for noodles and egg salad)

c. What was the highest percentage? (1) **42%**

d. Describe three ways that the suspected food may have become contaminated (6)

1. **Individuals who sliced the lettuce may have done so with dirty hands.**
2. **The lettuce may not have been washed well.**
3. **The table on which the lettuce was cut was not clean.**
4. **The serving bowls or utensils may not have been clean.**

e. What term describes a sudden increase in a disease? (1) **epidemic**

2. (6) Match each disease with its mode of transmission. Each disease will have only one answer, but some answers may be used more than once. Other answers may be not be used.

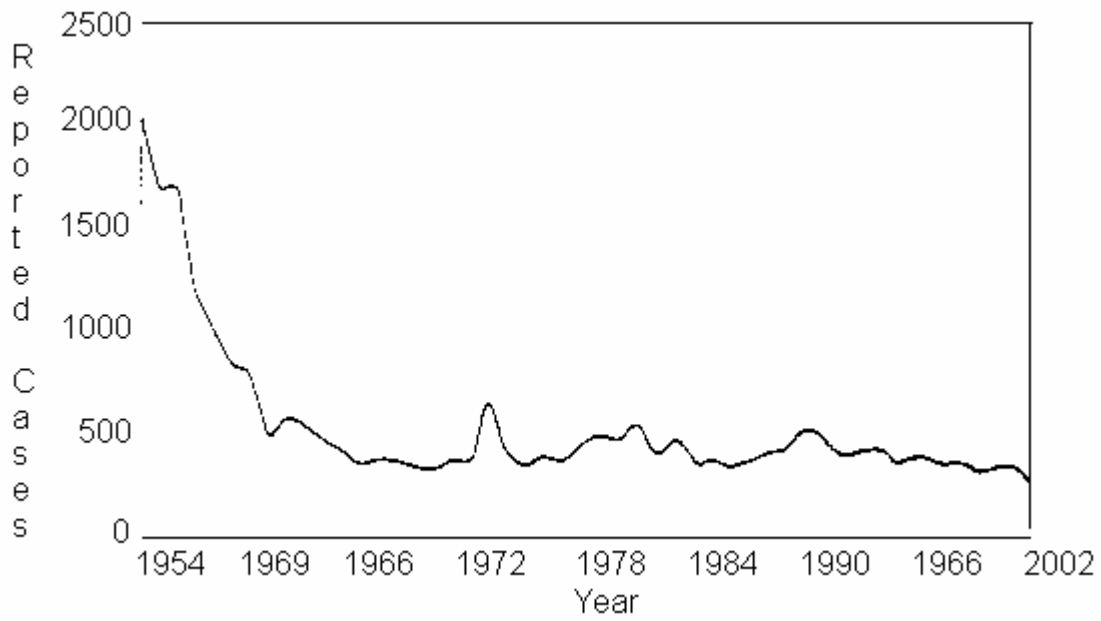
a.	**_B_** Lme disease	A.	mosquito borne
		B.	Tick borne
b.	**_A** _alaria	C.	Food/water borne
		D.	Blood/sexual transmission
c.	**_D_** HIV	E.	Unknown or not given
d.	**_C_** *E. coli*		
e.	**_A_** Yellow fever		
f.	**_E_** Athletes' foot		

3. (6) A number of students become ill while at school. List the steps you would follow, in correct order, to determine the probable organism that caused the outbreak. Not all the numbered steps need to be used.

1. **Collect blood, urine, and saliva samples from all students**
2. **Attempt to grow contents of samples on Petri plates and/or in test tubes**
3. **If growth appears on the plates, look for similar appearance from all students**
4. **Choose individual colonies from plates and inoculate into healthy animals**
5. **Wait for symptoms to appear**
6. **Isolate the organism from the diseased animals**

(Note: this question is based upon Koch's postulates.)

4. (4) The graph shows the incidence of tuberculosis from 1954 to 2000. On the graph, circle an incidence of an epidemic.



5. (11) Match the kind of organism with the disease that it causes. Some answers may be used more than once; others not at all. Each disease will have only one answer.

Disease	Organism
__D__ cold	A. protozoan
	B. fungus
__C__ tuberculosis	C. bacteria
	D. virus
__E__ Mad cow disease	E. agent unknown or not given
__D__ AIDS	
__B__ athletes foot	
__C__ syphilis	
__C__ bacterial pneumonia	
__E__ colon cancer	
__C__ dental cavities	
A or **E** red tide/paralytic shellfish poisoning	
__D__ influenza	