Community and Population Health

1) The following is an example of primary prevention:
   a) Routine mammography to detect early breast cancer tumour growth
   b) Routine Pap smear to detect early endocervical cytological changes
   c) ACE inhibitor to treat hypertension
   d) Vaccination to prevent diphtheria
   e) Lithium to manage mood symptoms associated with bipolar disorder

2) The number one cause of potential years of life lost (PYLL) in Canada is:
   a) Neoplasm
   b) Circulatory disease
   c) Unintentional injuries
   d) Suicide
   e) Respiratory disease

3) Which of the following statements regarding sensitivity of Test X for Disease Y is true?
   a) It is defined as the true positives divided by the false negatives
   b) It refers to the proportion of the people who do not have Disease Y whose Test X is negative
   c) If Test X is sensitive and is found to be negative, it can be used to rule out a disease hypothesis
   d) Sensitivity and specificity are not useful in determining the likelihood ratio of a test
   e) The positive predictive value of Test X is the inverse of the sensitivity of Test X

4) Which of the following statements regarding measurements of the effectiveness of interventions is false?
   a) Relative risk reduction (RRR) is defined as the proportional reduction in rates of bad outcomes between experimental and control participants in a trial
   b) Absolute risk reduction (ARR) is defined as the absolute arithmetic difference in rates of bad outcomes between experimental and control participants in a trial
   c) The number needed to treat (NNT) is defined as the inverse of the absolute risk reduction (ARR) -- i.e. 1/ARR
   d) Compliance is defined as the degree to which a patient adheres to a treatment plan
   e) Effectiveness is defined as the extent to which a specific intervention produces a beneficial result under ideal conditions achieved in a clinical trial

5) Which is not a result of chronic lead exposure?
   a) Peripheral motor neuropathy
   b) Nephrotoxicity
   c) Hemolytic anemia
   d) Microcytic anemia

6) Which is not a function of municipal public health units?
   a) Tobacco legislation enforcement
   b) Inspections of restaurants
   c) Approval of new medications
   d) Reportable disease surveillance and follow-up

7) Which of the following is not a reportable disease?
   a) HIV
   b) Measles
   c) Tetanus
   d) Streptococcal pharyngitis

8) Which is an example of a propagated epidemic?
   a) Exposure is brief and essentially simultaneous after exposure to a common source
   b) Begins with only a few exposed persons, but is maintained by person-to-person transmission
   c) Exposure to a common source lasts for a period of days to weeks

9) Which is an example of a cohort study?
   a) Subjects are sampled, and as a group are classified on the basis of presence or absence of exposure to a particular risk factor
   b) Samples a group of people who already have a particular outcome and compares them to a similar sample group without that outcome
   c) Status of individual with respect to presence and absence of both exposure and disease assessed at one point in time
   d) Random distribution of baseline characteristics and treatment between groups

10) Which is not true of the WSIB?
    a) The WSIB decides benefits for workers
    b) The employers pay for WSIB costs
    c) Once a claim has been made, physicians are required to provide the WSIB with information about a worker's health
    d) Workers are able to sue the employer up to a maximum of $100,000 in cases of negligence

11) Which one of the following is not a typical feature of asbestosis?
    a) Increased risk of cancer
    b) Pleural thickening and calcification
    c) Interstitial fibrosis
    d) Obstructive pattern on pulmonary function tests
    e) None of the above

12) Lead exposure typically results in:
    a) Chronic dermatitis
    b) Resting and intention tremor
    c) Extensor muscle weakness
    d) Arrhythmias
    e) Cerebellar ataxia

13) Which of the following statements concerning the Worker's Compensation Act is true?
    a) The worker reserves the right to sue the employer for negligence
    b) Funding is provided by the provincial government
    c) The worker is guaranteed payment from the first day of injury/illness if it is deemed to be work-related
    d) The Worker's Compensation Board is an independent, private agency
    e) None of the above

14) Which of following statements regarding radiation is false?
    a) Natural background radiation accounts for about half of a typical person's exposure
    b) Ionizing radiation causes intestinal villi to become denuded
    c) Exposure to non-ionizing radiation may result in cataracts
    d) Ionizing radiation results in an increased incidence of neoplasia such as lung and thyroid
    e) None of the above

15) Which statement concerning vibration induced white finger disease is false?
    a) Early symptoms include tingling and numbness of the fingers when at rest
    b) Swelling of the fingers over knuckles may be an early feature
    c) Cold, damp conditions may precipitate symptoms
    d) The affected area eventually spreads to involve all fingers
    e) None of the above

16) In a cohort study of disease "X" in people with risk factor "Y" versus those who are without risk factor "Y", the following results were obtained:

	X	no X	Total
Y	80	20	100
no Y	50	50	100

The relative risk of developing "X" in "Y" versus no "Y" is:

a) $\dfrac{80 \times 50}{50 \times 20} = 4$ c) $\dfrac{50 \times 80}{20 \times 50} = 4$

b) $\dfrac{50}{100} - \dfrac{20}{100} = 0.3$ d) $\dfrac{80/100}{50/100} = 1.6$

e) it is not possible to calculate risk in a cohort study

17) The attributable risk of factor "Y" to disease "X" would be:

a) $\dfrac{80/100}{50/100} = 1.6$ c) $\dfrac{80 \times 50}{50 \times 20} = 4$

b) $\dfrac{80}{100} - \dfrac{50}{100} = 0.3$ d) $\dfrac{50 \times 20}{80 \times 50} = 0.25$

e) it is not possible to calculate atrributable risk in a cohort study

18) A group of 50 people are exposed to virus "A". Of those 50 people, 9 develop a mild infection, 10 become seriously ill, and 3 die. The attack rate of virus "A" in the population would be:
a) 22/50
b) 9/50
c) 10/50
d) 19/50
e) 13/50

19) The following indicate the results of screening test "Q" in screening for disease "Z":

Disease Z		+	-		
	+	40	10	50	
Screen	-	30	120	150	Q
		70	130	200	

The specificity of test "Q" would be:
a) 40/70
b) 120/130
c) 40/50
d) 120/150
e) 40/130

20) The positive predictive value would be:
a) 40/70
b) 120/130
c) 40/50
d) 120/150
e) 70/200

21) To determine an odds ratio one would have to perform which of the following studies?
a) A cross sectional/prevalence study
b) A randomized controlled trial
c) A cohort study
d) A case study
e) A case control study

22) Examples of secondary prevention would include all of the following EXCEPT:
a) Pap smear for cervical cancer
b) Chemoprophylaxis in a recent TB converter
c) Proctoscopy for rectal cancer
d) Immunization for Haemophilus influenzae B
e) Mammography for breast cancer

23) Alpha error is:
   a) The probability of declaring a difference to be absent when it in fact is present
   b) The probability of declaring a difference to be present when it is not
   c) The probability of declaring a difference to be absent when it is indeed absent
   d) The probability of declaring a difference to be present when it does exist

24) Which one of the following descriptors of a diagnostic test is influenced by the prevalence of the disease being tested for:
   a) Specificity
   b) Sensitivity
   c) Accuracy
   d) Positive predictive value
   e) Reliability

25) Which of the following statements regarding the measurement of health and disease in a population is true?
   a) A rate is the number of times an event has occurred during a certain time interval divided by the number of persons at risk during the same interval
   b) When calculating a ratio, the numerator is a portion of the denominator
   c) A ratio is the number of times an event has occurred during a certain time interval multiplied by the number of times an event has occurred during the same interval
   d) When calculating a rate, the numerator is not a portion of the denominator
   e) None of the above

26) In 1990, which country spent the least on health care as a percentage of GDP (gross domestic product):
   a) Canada
   b) France
   c) Sweden
   d) UK
   e) USA

27) The component of Canada's health care system that receives the highest percentage of the health care budget is:
   a) Hospitals
   b) Physician fees
   c) Drug benefit plans
   d) Laboratory services
   e) Administration

28) The British North America Act (BNA):
   a) Was mainly concerned with health care legislation
   b) Granted exclusive powers over health care to the provinces, including powers over marine hospitals
   c) Replaced the Canada Health Act
   d) Applied to British Columbia only
   e) None of the above

29) Regarding health expenditure and health outcomes:
   a) The U.S. has the greatest health expenditure and the lowest infant mortality rates
   b) There is a positive association between national expenditure on health and GDP
   c) Increased national health expenditure always increases health status of a country
   d) All of the above
   e) None of the above

30) Which of the following is the most important justification for population screening programs for a specific disease?
   a) Early detection of the disease of interest is achieved
   b) The specificity of the screening test is high
   c) The natural history of the disease is favourably altered by early detection
   d) Effective treatment is available
   e) The screening technology is available

31) Regarding the regulation of health professionals, provincial colleges of physicians and surgeons:
a) Have the advancement of the public interest as their primary goal
b) Protect the public from incompetent or unfit MDs
c) Act as licensing bodies for MDs
d) Do not advance the professional and political interests of MDs
e) All of the above

32) Active immunization was important in control of each of the following childhood communicable diseases EXCEPT:
a) Diphtheria
b) Polio
c) Measles
d) Scarlet fever
e) Pertussis

33) All of the following statements are true EXCEPT:
a) One indirect measure of a population's health status is the percentage of low birth weight neonates
b) Accidents are the largest cause of potential years of life lost in Canada
c) The Canadian population is steadily undergoing rectangularization of mortality
d) Morbidity is defined as all health outcomes excluding death
e) The neonatal mortality rate is the number of infant deaths divided by the number of live births multiplied by 1000

34) All of the following statements are true EXCEPT:
a) The data collected on a death certificate is uniform and in conformity with WHO guidelines
b) Section 7 of the Coroner's Act states that the coroner's office must be notified if a patient dies after some mishap such as leaving an instrument in the body at surgery
c) Diseases which must be reported to the local medical officer of health include AIDS, food poisoning, influenza and gonorrhea
d) A tuberculin reaction greater than 5 mm is considered positive in all individuals
e) All of the above

35) In describing the leading causes of death in Canada, two very different lists emerge, depending on whether proportional mortality rates or person-years of life lost (PYLL) are used. This is because:
a) One measure uses a calendar year and the other a fiscal year to calculate annual experience
b) One measure includes morbidity as well as mortality experience
c) Both rates exclude deaths occurring over the age of 70
d) Different definitions of "cause of death" are used
e) One measure gives greater weight to deaths occurring in younger age groups

36) Differentiation between a point-source epidemic and a progressive (propagated) epidemic is made by:
a) Considering the characteristics of the infectious agent
b) Determining the level of immunity in the community
c) Determining the number of persons infected and calculating the attack rate
d) Plotting the distribution of cases by time onset
e) None of the above

37) The occurrence of an illness at a rate of above that expected is called:
a) Hyperendemic
b) Epidemic
c) Endemic
d) Enzootic
e) Pandemic

38) Each of the following statements applies to case control studies EXCEPT:
a) Starts with disease
b) Suitable for rare diseases
c) Relatively inexpensive
d) Prolonged follow-up required
e) There may be a problem in selecting and matching controls

39) A clinician who has been examining the patterns of mortality in your community says that the rates for heart disease and lung cancer are higher in this community than in an adjacent community. Which of the following questions should you ask first?
a) How did the clinician choose the comparison community?
b) Have the rates been standardized for age?
c) Are tobacco sales significantly different in the two communities?
d) Are the facilities to treat these diseases comparable in the two areas?
e) Are the numbers of deaths comparable in each area?

40) The purpose of randomization is to:
a) Make sure that there are equal numbers of men and women in test and control groups
b) Increase the chances of getting a statistically significant difference
c) Ensure that the numbers of cases and controls are equal
d) Limit bias
e) All of the above

41) Which of the following types of studies usually provides only a measure of prevalence?
a) Descriptive
b) Cross-sectional
c) Randomized controlled trial
d) Cohort
e) None of the above

42) The major advantage of cohort studies over case-control studies is that:
a) They take less time and are less costly
b) They can utilize a more representative population
c) It is easier to obtain controls who are not exposed to the factor
d) They permit estimation of risk of disease in those exposed to the factor
e) They can be done on a "double-blind" basis

43) All of the following statements concerning occupational health are true EXCEPT:
a) Disorders of reproduction are among the top 10 work-related diseases and injuries
b) Most workers are covered by both federal and provincial legislation with respect to workplace health and safety
c) Skin problems and hearing problems together are responsible for half of WCB claims
d) A complete occupational medical history includes investigation of the temporal relationship between symptoms and exposure

44) Which of the following statements concerning exposure to solvents in the workplace is true?
a) Each solvent compound has a specific antidote that can be used to treat exposure
b) A prominent symptom of solvent exposure is memory loss
c) Some solvents can cause skin dryness and loss of subcutaneous adipose tissue
d) Solvents do not affect the bone marrow
e) All of the above

45) In 1981, the crude birth rate in Ontario was approximately 14 per 1000 and the crude death rate was 7 per 1000. The estimated rate of net migration was –1 per 1000. The growth rate of the province, per 1000 population was:
a) 6
b) 7
c) 8
d) 20
e) 22

46) All of the following statements about environmental health are true EXCEPT:
a) Levels of toxic agents measured in the environment may not reflect internal organ levels
b) The federal government monitors the quality and types of industrial emissions and toxic waste disposal
c) Sick building syndrome is associated with Pontiac fever and Legionnaire's disease
d) All humans have detectable levels of PCBs
e) None of the above is true

47) The effectiveness of a preventative measure is assessed in terms of:
a) The effect in people to whom the measure is offered
b) The effect in people who comply with the measure
c) Availability with the optimal use of resources
d) The cost in dollars versus the benefits in improved health status
e) All of the above

48) All of the following statements about the Canada Health Act (1984) are true EXCEPT:
a) It did not define all medically necessary hospital and physician services
b) The CHA replaced the Hospital Insurance and Diagnostic Services Act of 1957
c) The CHA banned all forms of extra billing
d) According to the CHA, provinces must meet all the terms and conditions of Medicare to qualify for federal transfer payments
e) None of the above

49) Each of the following is an example of primary prevention EXCEPT:
a) Genetic counselling of parents with one retarded child
b) Nutritional supplements in pregnancy
c) Immunization against tetanus
d) Chemoprophylaxis in a recent tuberculin converter
e) Speed limits on highways

50) The classical "epidemiological triad" of disease causation consists of factors which fall into which of the following categories:
a) Host, reservoir, environment
b) Host, vector, environment
c) Host, agent, environment
d) Reservoir, agent, vector
e) Host, age, environment

51) Of the five items listed below, the one which provides the strongest evidence for causality in an observed association between exposure and disease is:
a) A large attributable risk
b) A large relative risk
c) A small p-value
d) A positive result from a cohort study
e) A case report

52) The difference between a common point source outbreak and a propagated outbreak of illness is that:
a) All cases in a common point source outbreak occur within one incubation period of the exposure
b) The attack rates in propagated outbreaks are higher
c) Person-to-person transmission is a feature of common source outbreaks
d) Case fatality rates in common source outbreaks are generally higher
e) The source of infection in propagated outbreaks is more easily contained than in common source outbreaks

53) Which of the following are strategies for control of disease:
a) Population immunization
b) Contact tracing to offer treatment to all who could be infected
c) Monitoring increases in the population of certain disease vectors
d) Having physicians report curable, potentially serious diseases
e) All of the above are true

54) During a clinical trial, the difference in the success rates of two drugs was not statistically significant. This means that:
a) There is no difference in drug effectiveness
b) There is a sizable probability that the demonstrated difference in the drugs' effectiveness could occur due to chance alone
c) The demonstrated difference in the drugs' effectiveness is too small to be clinically meaningful
d) The two samples of patients on which the drugs were tested came from the same population
e) None of the above are true

55) The incidence of a particular disease is greater in men than in women, but the prevalence shows no sex difference. The most probable explanation is that:
a) The mortality rate is greater in women
b) The case fatality rate is higher in women
c) The duration of the disease is longer in women
d) Women receive less adequate medical care for the disease
e) This diagnosis is more often missed in women

56) All of the following statements about statistical tests are true EXCEPT:
a) Linear regression is used to describe the relationship between two continuous variables
b) A confidence interval is a range of values giving information about the precision of a measurement
c) ANOVA tables are used to make comparisons among the means of 3 or more groups simultaneously
d) In a normal distribution, the mean, median and mode are equal
e) The chi-square test evaluates the statistical significance of 2 or more percentages of categorical outcomes

57) All of the following are responsibilities of local public health units in Canada EXCEPT:
a) Communicable disease control
b) Health education
c) Investigation of sudden death
d) Immunization
e) Health promotion

58) Who is ultimately responsible for the quality of care in a hospital?
a) Chief executive officer
b) Board of trustees
c) Medical director
d) Chief of staff
e) Attending physicians

59) Which of the following is not one of the 5 Terms and Conditions of Medicare?
a) Portability
b) Flexibility
c) Universality
d) Comprehensive coverage
e) Accessibility

60) You are given this data pertaining to an outbreak of diarrhea in a daycare:

Age	Number of Children	Number of Diarrhea
1	25	20
2	20	10
3	40	10
4	40	5
5	20	4
6+	25	1

What is the attack rate of this illness?
a) 25%   d) 40%
b) 30%   e) 66%
c) 33%

61) Which of the following is not in the top 10 leading causes of death in Canada?
a) Respiratory diseases
b) Malignant neoplasms
c) Diseases of the heart
d) Accidents
e) Viral hepatitis

62) Which of the following will increase the power of a study?
a) Increase beta
b) Analyze data using more powerful statistical tests
c) Change from z-test to a t-test
d) Increase sample size
e) None of the above

ANSWERS

1. D	13. C	25. A	37. B	49. D
2. A	14. E	26. D	38. D	50. C
3. C	15. E	27. A	39. B	51. B
4. E	16. D	28. E	40. D	52. A
5. C	17. B	29. B	41. B	53. E
6. C	18. A	30. C	42. D	54. B
7. D	19. B	31. E	43. B	55. C
8. B	20. C	32. D	44. C	56. E
9. A	21. E	33. E	45. A	57. C
10. D	22. D	34. D	46. B	58. D
11. D	23. B	35. E	47. A	59. B
12. C	24. D	36. D	48. C	60. C
				61. E
				62. D