

Name

Class

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Chapter 20 - Consumer Concerns about Foods and Water

1. The ability of a substance to harm a living organism is known as which of the following terms?

- a. hazard
- b. toxicity
- c. risk level
- d. safety level

ANSWER:

b

2. What is the term for the measure of the probability and severity of harm?

- a. risk
- b. safety
- c. hazard
- d. toxicity

ANSWER:

a

3. Which of these terms describes the possibility of harm from normal use of a substance?

- a. hazard
- b. toxicity
- c. bioinsecurity
- d. food insecurity

ANSWER:

a

4. What government agency is charged with protecting the safety of Canada's food supply?

- a. Environment Canada
- b. The Canadian Food Inspection Agency
- c. The Food Safety and Security Agency
- d. The FDA subcommittee on Food Safety and Hazards Agency

ANSWER:

b

5. Which of the following is the international agency that has adopted standards to regulate the use of pesticides?

- a. FAO
- b. FDA
- c. CDC
- d. USDA

ANSWER:

a

6. According to the Canadian Food Inspection Agency, which of the following is the leading food safety concern?

- a. food additives
- b. pesticide residues
- c. foodborne illnesses
- d. environmental contaminants

ANSWER:

c

7. Two or more cases of a similar illness resulting from the consumption of a common food is termed which of the

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following?

- a. a disease
- b. an outbreak
- c. an epidemic
- d. a toxic incidence

ANSWER:

b

8. According to Canadian Public Health Agency experts, how many people in the Canada experience foodborne illness every year?

- a. 1 million
- b. 2 million
- c. 4 million
- d. 8 million

ANSWER:

c

9. Which of the following symptoms is a severe symptom of foodborne illness that requires medical attention?

- a. fever lasting 8 hours
- b. abdominal cramps
- c. bloody diarrhea
- d. vomiting

ANSWER:

c

10. Which of the following microbes is most likely to cause illness that is fatal in high-risk individuals?

- a. *Giardia intestinalis*
- b. *Staphylococcus aureus*
- c. *Listeria monocytogenes*
- d. *Clostridium perfringens*

ANSWER:

c

11. Which of the following is NOT among the most common symptoms of food-borne infection caused by *Salmonella* bacteria?

- a. fever
- b. cramps
- c. diarrhea
- d. double vision

ANSWER:

d

12. Which of these organisms is responsible for producing the most common food toxin?

- a. *Escherichia coli*
- b. *Vibrio vulnificus*
- c. *Staphylococcus aureus*
- d. *Lactobacillus acidophilus*

ANSWER:

c

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13. Which of the following is an example of food intoxication?

- a. addition of alkaline and acidic agents to foods
- b. illness produced by acute overconsumption of high-fat foods
- c. addition of alcohol-containing beverages in the cooking of foods
- d. illness produced from ingestion of food contaminated with natural toxins

ANSWER: d

14. Which of the following describes botulism?

- a. It is rarely fatal and victims usually recover completely.
- b. It is caused by ingestion of food contaminated with a combination of aflatoxin and mould.
- c. It most often occurs from eating foods that were stored under aerobic conditions of high pH.
- d. It is caused by a toxic compound produced by a microbe rather than ingestion of the bacteria.

ANSWER: d

15. Which of the following is a characteristic of botulism?

- a. A primary symptom is diarrhea.
- b. A full recovery may take years.
- c. It is caused by the organism *Staphylococcus aureus*.
- d. It is a toxicant produced in foods stored under aerobic conditions.

ANSWER: b

16. The industrial application of heat to inactivate most but not all bacteria in a food is commonly known as which of these processes?

- a. sanitization
- b. sterilization
- c. pasteurization
- d. depathogenation

ANSWER: c

17. What system was developed by government regulatory agencies and the food industry to help identify and/or control food contamination and foodborne disease?

- a. The Two-Forty-One-Forty rule
- b. Safe Handling Certification Program
- c. Hazard Analysis Critical Control Point
- d. North American Residue Monitoring Program

ANSWER: c

18. Which of these pairs of organisms are the organism that causes most foodborne illness and the organism that causes most foodborne illness-related death?

- a. *Listeria* and *Yersinia*
- b. *Salmonella* and *Listeria*
- c. *Giardia* and *Campylobacter*

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- d. *Campylobacter* and *Salmonella*

ANSWER:

b

19. A patient with a high temperature complains of headache, stomach ache, fever, and vomiting. Upon questioning, he admits to eating several raw eggs the day before. The most likely organism causing these symptoms is which of the following?

- a. *Escherichia coli*
- b. *Salmonella*
- c. *Clostridium perfringens*
- d. *Campylobacter jejuni*

ANSWER:

b

20. *Clostridium botulinum* poisoning is a hazard associated with which of the following foods?

- a. fresh carrots
- b. rotting vegetables
- c. undercooked poultry
- d. improperly canned vegetables

ANSWER:

d

21. A child is brought into the emergency room with breathing difficulties. He also has difficulty swallowing and speaking. The mother mentions that he ate some home-canned beans yesterday. You suspect microbiological food poisoning. The most likely toxin is which of these?

- a. campylobacteria toxin
- b. giardiasis toxin
- c. salmonella toxin
- d. botulinum toxin

ANSWER:

d

22. Which of the following is the major food source for transmission of *Campylobacter* bacteria?

- a. raw poultry
- b. uncooked seafood
- c. imported soft cheeses
- d. undercooked beef hot dogs

ANSWER:

a

23. Which of the following foods are associated with illness from *Salmonella*?

- a. raw vegetables
- b. pickled vegetables
- c. home-canned vegetables
- d. raw meats and poultry

ANSWER:

d

24. Of the food products sold in Canada, approximately what percentage is produced in Canada?

- a. 10 percent

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- b. 30 percent
- c. 50 percent
- d. 80 percent

ANSWER:

b

25. Which of the following is especially susceptible to microbial growth?

- a. chicken stored in the freezer
- b. fruit juice stored in the refrigerator
- c. ground meat
- d. canned meat

ANSWER:

c

26. Which of the following events would most likely result from placing cooked hamburger patties on the same plate that held the uncooked patties?

- a. flavour declination
- b. meat juice retention
- c. fat drippings exudation
- d. microbial cross-contamination

ANSWER:

d

27. What is the recommended minimum amount of time for washing hands with warm water and soap before preparing or eating food?

- a. 5 to 10 seconds
- b. 20 seconds
- c. 30 to 60 seconds
- d. 2 minutes

ANSWER:

b

28. Scenario: A foodborne illness outbreak was reported after employees of a national chain restaurant had used the same knife to cut raw meat products as they did for vegetables. Which of the following terms most accurately describes what led to the patrons of the restaurant becoming ill?

- a. contamination
- b. cross-contamination
- c. hazard analysis critical control points
- d. inappropriate monitoring of food temperatures

ANSWER:

b

29. The Canadian Food Inspection Agency recommends that “safe handling instructions” appear on which of the following food items?

- a. raw ground walnuts
- b. cooked deli salami
- c. smoked fish
- d. fresh ground poultry

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ANSWER: d

30. Why is ground meat more susceptible to microbial contamination than non-ground meat?

- a. It is not inspected as often.
- b. It is usually undercooked.
- c. It has a higher fat content.
- d. It has more surface area.

ANSWER: d

31. You work part-time at a local diner and an older employee tells you that one of the worst oversights he sees is the workers' disregard for the "danger" zone. Which of the following is an example of the oversight he has seen?

- a. keeping the freezer at 1°C
- b. serving raw seafood without proper cooking techniques
- c. keeping beef patties on a warm grill (57°C) for up to three hours
- d. not disposing of egg shells immediately after use and allowing them to sit on countertops

ANSWER: c

32. What country accounts for most of the reported cases of mad cow disease?

- a. China
- b. Hong Kong
- c. United States
- d. United Kingdom

ANSWER: d

33. In cows infected with mad cow disease, which of the following tissues is generally free of the infectious agents?

- a. brain
- b. liver
- c. intestines
- d. muscle

ANSWER: d

34. Which of the following is a property associated with the safe cooking of hamburgers?

- a. Colour alone is usually indicative of "doneness."
- b. Burgers should be cooked to at least medium-rare.
- c. Burgers should be cooked to an internal temperature of 60°C.
- d. Some burgers will turn brown before reaching the recommended temperature.

ANSWER: d

35. Which of the following is a feature of the H1N1 virus?

- a. H1N1 is a strain of *E. coli*.
- b. H1N1 can be transmitted by eating infected pork.
- c. H1N1 is considered only a mildly contagious viral infection.
- d. H1N1 is spread mainly via coughs and sneezes of infected individuals.

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ANSWER: d

36. What is a benefit derived from the commercial freezing of fish?

- a. The fish becomes tenderized.
- b. Botulinum toxin becomes inactivated.
- c. The fish becomes completely safe to eat raw.
- d. Mature parasitic worms are killed.

ANSWER: d

37. To minimize the possibility of food-borne illness, hamburger should be cooked to an internal temperature of at least which of the following?

- a. 51°C
- b. 60°C
- c. 71°C
- d. 90°C

ANSWER: c

38. Which of the following is the most appropriate method to thaw turkey?

- a. in the refrigerator
- b. at room temperature
- c. on top of a warm oven
- d. under very low heat in the oven

ANSWER: a

39. Which of the following foods is a common source of the hepatitis virus?

- a. chicken
- b. sprouts
- c. legumes
- d. oysters

ANSWER: d

40. Which of the following practices is safest for minimizing microbial contamination of prepared foods?

- a. Store food in a controlled atmosphere of chlorine bleach vapours.
- b. Restrict the food's exposure at room temperature to a maximum of four to six hours.
- c. Restrict the food's exposure between 4°C and 60°C to a maximum of two hours.
- d. Store food under air-tight conditions at a temperature of 0°C for a maximum of one month.

ANSWER: c

41. Consumption of raw oysters can cause which type of hepatitis?

- a. type A
- b. type B
- c. type C
- d. type D

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ANSWER:

a

42. Which of the following is a characteristic of raw oyster consumption?

- a. Freezing for 24 hours kills viruses in oysters.
- b. Some hot sauces can kill viruses, but not bacteria, in oysters.
- c. At least ten species of bacteria in raw oysters can cause serious illness.
- d. Consuming alcohol with raw oysters is effective in preventing foodborne illness.

ANSWER:

c

43. Which of the following practices would increase the risk of foodborne illness?

- a. using hands to mix foods
- b. thawing meats in the refrigerator
- c. using a meat thermometer
- d. using hot, soapy water to wash hands, utensils, and countertops

ANSWER:

a

44. What is the minimum recommended safe temperature to heat leftovers?

- a. 62°C
- b. 68°C
- c. 75°C
- d. 83°C

ANSWER:

c

45. Which of the following often contains raw eggs?

- a. mustard
- b. whipped cream
- c. hollandaise sauce
- d. vinegar and oil salad dressing

ANSWER:

c

46. What is the safe refrigerator storage time for uncooked steaks, cooked chicken, opened packages of luncheon meats, and tuna salad?

- a. 1 to 2 days
- b. 3 to 5 days
- c. 1 week
- d. 2 to 4 weeks

ANSWER:

b

47. Which of the following methods of thawing meats or poultry increases health risk?

- a. in the refrigerator
- b. at room temperature
- c. in a microwave oven
- d. under cool running water

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ANSWER: b

48. What is the main reason why foodborne illness commonly occurs in a Canadian travelling overseas?

- a. Most other countries have no food safety standards or awareness.
- b. There is a higher number of microbes that contaminate food in other countries.
- c. There is a lack of immunity to pathogens that are present in other parts of the world.
- d. Mostly raw or undercooked foods are consumed in other countries.

ANSWER: c

49. What are the chances of contracting diarrhea while travelling to other countries?

- a. 1 in 2
- b. 1 in 10
- c. 1 in 100
- d. 1 in 1000

ANSWER: a

50. Which of the following is an example of a food preservation technique?

- a. irradiation used to sterilize spices
- b. carotenoids used to retard formation of nitrosamines
- c. sulphites used to retard growth of pathogenic organisms
- d. nitrites used to form unique radiolytic particles when the food is overheated

ANSWER: a

51. A patient reports that, since returning from overseas travel to a developing country, she has been experiencing stomach cramps and diarrhea. Which of the following foodborne organisms is most likely responsible for these symptoms?

- a. *Listeria monocytogenes*
- b. *Clostridium botulinum*
- c. *Clostridium perfringens*
- d. *Shigella* bacteria

ANSWER: d

52. Among the following organisms, which one is responsible primarily for causing “travellers’ diarrhea”?

- a. *Vibrio*
- b. *Escherichia coli*
- c. *Staphylococcus aureus*
- d. *Clostridium botulinum*

ANSWER: b

53. Which of the following is NOT appropriate advice on sanitation for someone travelling to another country?

- a. Drink all beverages without ice.
- b. Drink bottled carbonated beverages.
- c. Boil the local water before use to kill microbes.

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- d. Eat fruits and vegetables raw with their skins to decrease risk from wash-water contamination.

ANSWER:

d

54. You are presenting a general seminar at a food-safety convention. At the end of your talk, an audience member barrages you with questions about irradiation of foods causing people to be exposed to radioactive food. How should you respond?

- a. Irradiation techniques do not produce radioactive foods.
- b. Any radioactivity in the irradiated foods will be destroyed by cooking the foods.
- c. There is only cause for concern of radiation when treating foods such as milk, grapefruits, eggs, and high-fat meats.
- d. Radioactive foods have been approved for consumption by the Canadian Medical Association, the FAO, and the WHO.

ANSWER:

a

55. Which of the following foods has NOT been approved for irradiation in Canada?

- a. potatoes
- b. milk
- c. wheat
- d. spices

ANSWER:

b

56. What processing method allows for cartons of milk to be shelved in grocery stores at room temperature?

- a. prolonged pasteurization
- b. boiling for exactly ten minutes
- c. ultrahigh temperature treatment
- d. combination irradiation/pasteurization

ANSWER:

c

57. Why is irradiation not the preferred method for preserving milk?

- a. Irradiation imparts off flavours in milk.
- b. Irradiation removes the fat content of milk.
- c. Irradiation is inefficient at killing microorganisms
- d. irradiation results in high amounts of radioactive food particles

ANSWER:

a

58. Which of the following is a common term to describe the process of irradiation?

- a. UHT treatment
- b. radura treatment
- c. cold pasteurization
- d. pulsed electron beam

ANSWER:

c

59. Which of the following is a feature of irradiation?

- a. Irradiation of fresh vegetables and fruit decreases shelf life.

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- b. The World Health Organization has not approved food irradiation.
- c. The labels of all foods except for meats must indicate treatment by irradiation.
- d. The irradiation label is not required on commercially prepared foods that contain irradiated ingredients.

ANSWER: d

60. Which of the following practices in vegetable handling would minimize vitamin loss?
- a. cooking vegetables in water rather than steaming
 - b. washing vegetables before cutting rather than after cutting
 - c. keeping vegetables at room temperature rather than in the refrigerator
 - d. storing cut vegetables in an open container rather than an airtight container

ANSWER: b

61. Which of these nutrients in foods are most vulnerable to losses during food handling and preparation?
- a. trace minerals
 - b. fat-soluble vitamins
 - c. polyunsaturated fats
 - d. water-soluble vitamins

ANSWER: d

62. The extent to which an environmental contaminant becomes harmful depends primarily on which of these factors?
- a. its persistence
 - b. its solanine content
 - c. its soil absorption efficiency
 - d. its water-solubility characteristics

ANSWER: a

63. Which of the following are examples of heavy metals?
- a. molybdenum and magnesium
 - b. iron and chromium
 - c. calcium and iron
 - d. mercury and lead

ANSWER: d

64. Which of the following activities is an example of heavy metal exposure from foods?
- a. cooking foods for prolonged periods in iron skillets
 - b. ingesting food containing high amounts of mercury
 - c. ingesting food supplements containing high levels of calcium and sodium salts
 - d. cooking foods over superheated charcoal containing high levels of copper and iron

ANSWER: b

65. The increase in the concentration of contaminants in the tissues of animals high on the food chain is termed which of the following?
- a. bioaccumulation

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- b. hyperconcentration
- c. evolutionary containment
- d. functional high-level accumulation

ANSWER:

a

66. Which of the following best describes organic halogens?

- a. heavy metals
- b. safe additives
- c. toxic chemicals
- d. component of most proteins

ANSWER:

c

67. What is the primary source of dietary mercury?

- a. seafood
- b. legumes
- c. unfiltered water
- d. undercooked poultry

ANSWER:

a

68. Of the following types of seafood, which should be consumed in the smallest amount by pregnant and lactating women?

- a. shrimp
- b. canned light tuna
- c. pollock and catfish
- d. white albacore tuna

ANSWER:

d

69. Which of the following is a characteristic of mercury content in fish?

- a. Very few fish are contaminated with mercury.
- b. Salmon contains the highest amount of mercury.
- c. Larger fish have less mercury due to the dilutional effect of size.
- d. Farm-raised fish typically have less mercury than wild-caught fish.

ANSWER:

d

70. Which of the following is a characteristic of heavy metals in the Canadian food supply?

- a. Fish caught in Canadian lakes and rivers are mercury-free.
- b. Fish destined for commercial sale are monitored for mercury levels.
- c. Canadians should limit their consumption of fish due to heavy metal contamination.
- d. Average blood levels of heavy metals are above acceptable levels in Canadian children.

ANSWER:

b

71. Your friend Mark believes that consuming natural organic foods will eliminate toxins from his diet. You warn Mark that not all natural foods are free from toxins. The example you provide could be solanine found commonly in which of

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these foods?

- a. beets
- b. broccoli
- c. potatoes
- d. corn

ANSWER:

c

72. What is a factor related to solanine concentration in potatoes?

- a. contamination
- b. irradiation malfunction
- c. soil heavy metal content
- d. improper storage conditions

ANSWER:

d

73. Which of the following is characteristic of solanine in foods?

- a. It is not destroyed by cooking.
- b. It enhances absorption of lead.
- c. It antagonizes the thyroid gland.
- d. It is destroyed when potatoes start to sprout.

ANSWER:

a

74. Which of the following is a feature of naturally occurring food toxicants?

- a. Lima beans contain deadly cyanide compounds.
- b. The toxin solanine in potatoes is inactivated by cooking.
- c. The toxic laetrile in certain fruit seeds is a moderately effective cancer treatment.
- d. Mustard greens and radishes contain compounds that are known to worsen a cholesterol problem.

ANSWER:

a

75. Many countries restrict the varieties of commercially grown lima beans due to the seed's content of which of the following toxicants?

- a. cyanide
- b. solanine
- c. goitrogens
- d. hallucinogens

ANSWER:

a

76. Which of the following is an example of a natural toxicant and its food source?

- a. solanine in mushrooms
- b. goitrogen in cabbage
- c. cyanogen in potatoes
- d. acrylamide in tomatoes

ANSWER:

b

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77. What term is used to describe the highest level of a residue that is allowed in a food when the pesticide is used according to label directions?

- a. toxicity level
- b. tolerance level
- c. risk concentration
- d. optimum concentration

ANSWER: b

78. Which of these organizations is responsible for setting tolerance guidelines for the use of a pesticide on food?

- a. Health Canada
- b. Canadian Food Inspection Agency
- c. Environment Canada
- d. Pesticide Regulation Agency

ANSWER: a

79. What organization is responsible for enforcing the tolerances that are set for a pesticide on food?

- a. Health Canada
- b. Canadian Food Inspection Agency
- c. Environment Canada
- d. Pesticide Regulation Agency

ANSWER: b

80. The government monitors pesticides by sampling using which of the following criteria?

- a. all food shipments for all pesticides
- b. all food shipments for some pesticides
- c. some food shipments for all pesticides
- d. some food shipments for some pesticides

ANSWER: d

81. What is the name of the Health Canada division that conducts dietary risk assessment of pesticide exposure?

- a. Pest Management Regulatory Agency
- b. Toxicant Monitoring Program
- c. Food Safety and Health Program
- d. Diet and Market Analysis Report

ANSWER: a

82. Which of the following actions is NOT effective at minimizing pesticide exposure?

- a. washing waxed fruits and vegetables
- b. throwing away the outer leaves of leafy vegetables
- c. using a knife to peel citrus fruits rather than biting into the peel
- d. throwing away the fats and oils in pan drippings from cooked meats

ANSWER: a

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83. Food producers are allowed to label a food product as organic if it meets which of the following criteria?

- a. has been grown locally
- b. contains genetically engineered ingredients
- c. was grown with fertilizer made from sewer sludge
- d. does not contain ingredients that have been irradiated

ANSWER: d

84. Which of the following accurately describes pesticide use on organic foods?

- a. Pesticide residues on organic foods are similar to those on conventionally grown foods.
- b. Pesticides that are used on organic foods are easier to remove because of their greater water solubility.
- c. Pesticide residues are substantially reduced by the use of unprocessed animal manures to grow leafy vegetables.
- d. Pesticide chemicals in the urine of children given an organic foods diet for five days are lower than before the diet.

ANSWER: d

85. Most food additives are classified as which of the following?

- a. emulsifiers
- b. preservatives
- c. colour enhancers
- d. bleaching agents

ANSWER: b

86. Which of these instruments regulates the use of chemical additives?

- a. Food and Drugs Act and Regulations
- b. Public Health Agency of Canada Rules and Regulations
- c. Canadian Pesticide Committee Recommendations
- d. Canadian Food Inspection Agency Rules

ANSWER: a

87. What is the origin of the quotation "No additive shall be deemed to be safe if it is found to induce cancer when ingested by man or animal"?

- a. GRAS list
- b. Delaney Clause
- c. WHO Mandate of 1985
- d. USDA Bulletin of 1962

ANSWER: b

88. What is the name of the rule that modifies the original meaning of the Delaney Clause?

- a. GRAS list
- b. Bonnie Clause
- c. *de minimis* rule
- d. no-risk standard

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ANSWER:

c

89. What is the term that describes the allowance of most additives in foods at levels 100 times BELOW the lowest level known to cause any harmful effects?

- a. toxicity range
- b. zone of hazard
- c. acceptable area
- d. margin of safety

ANSWER:

d

90. Which of these is the classification given to a substance put into food to give it a certain colour?

- a. indirect additive
- b. incidental additive
- c. peripheral additive
- d. intentional additive

ANSWER:

d

91. Which of the following substances in the diet would typically have the lowest margin of safety?

- a. table salt
- b. pesticides
- c. preservatives
- d. colour additives

ANSWER:

a

92. Which of these categories is assigned to additives put in foods after a rational decision-making process?

- a. indirect
- b. incidental
- c. intentional
- d. contaminants

ANSWER:

c

93. Salt is used as antimicrobial agent in foods because it prevents microbial use of which of these food contents?

- a. fat
- b. water
- c. protein
- d. carbohydrate

ANSWER:

b

94. In searching for a recipe for homemade jelly, you come across a recipe by a notable food scientist who emphasizes the importance of the correct amount of sugar in the jelly, as it serves as the product's antimicrobial agent. What is the rationale behind this statement?

- a. Sugar is not a sustainable food source for most microbes.
- b. Sugar phagocytizes the microbes that are present in the jelly.

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- c. Sugar captures water and makes it unavailable for microbes.
- d. Sugar wards off offending bacterial agents present in the jelly.

ANSWER:

c

95. Of the following food additives, which is used most widely as an antimicrobial agent?

- a. sugar
- b. saccharin
- c. sodium nitrite
- d. sodium propionate

ANSWER:

a

96. What is the primary reason that nitrites are allowed to be added to certain meat products?

- a. Nitrites improve consistency.
- b. Nitrites stabilize the vitamin content of meat.
- c. Nitrites significantly enhance the flavour of meat.
- d. Nitrites inhibit the formation of botulinum toxin.

ANSWER:

d

97. Which of these substances is an antimicrobial agent?

- a. MSG
- b. sulphites
- c. tocopherol
- d. sodium nitrate

ANSWER:

d

98. Nitrites in cured meats have which of the following effects on the meat?

- a. softening of the texture
- b. preservation of the colour
- c. production of a rancid flavour
- d. prevention of mineral degradation

ANSWER:

b

99. When a slice of fresh apple turns a brown colour, this is most likely the result of which of the following processes?

- a. oxidation
- b. dehydration
- c. microbial contamination
- d. ethylene oxide treatment during ripening

ANSWER:

a

100. Which of the following substances added to foods inhibits the formation of botulinum toxin?

- a. BHA
- b. nitrites
- c. table salt

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- d. sodium ascorbate

ANSWER:

b

101. What is the primary reason why sulphites are added to foods?

- a. to improve flavour
- b. to prevent oxidation
- c. to thicken the consistency
- d. to enhance B vitamin absorption

ANSWER:

b

102. Which of these vitamins undergoes the most destruction in foods preserved with sulphites?

- a. folate
- b. thiamin
- c. riboflavin
- d. ascorbic acid

ANSWER:

b

103. Which of the following is an example of why sulphite is used in foods?

- a. to cure meats
- b. to prevent oxidation of wine
- c. to emulsify the components of mayonnaise
- d. to improve nutritional quality by spraying onto vegetables

ANSWER:

b

104. Which one of the following substances does NOT have antioxidant properties?

- a. BHA
- b. BHT
- c. solanine
- d. vitamin E

ANSWER:

c

105. Which of the following properties is shared by vitamins C and E, BHA and BHT, and sulphites?

- a. flavour enhancer
- b. antimicrobial agent
- c. antioxidant activity
- d. incidental food additive

ANSWER:

c

106. Which of the following is a characteristic of BHT?

- a. It is a food antimicrobial.
- b. It is a common food colorant.
- c. It contributes significantly to the total additive intake from the diet.
- d. It decreases cancer formation when given in large amounts to animals exposed to carcinogens.

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ANSWER: d

107. The flavour enhancer MSG is a dietary source of which of the following substances?

- a. sulphite
- b. sodium
- c. acrylamide
- d. bicarbonate

ANSWER: b

108. What is the largest single group of food additives?

- a. flavouring agents
- b. artificial sweeteners
- c. antimicrobial agents
- d. artificial colouring agents

ANSWER: a

109. Which of the following additives is a flavour-enhancing food additive?

- a. BHT
- b. beta-carotene
- c. sodium propionate
- d. monosodium glutamate

ANSWER: d

110. Which of the following features applies to monosodium glutamate added to food?

- a. creates a pleasant flavour called umami
- b. induces an allergic reaction in some people
- c. can be listed as just "sodium" on ingredient lists
- d. enhances sweet but not bitter or sour tastes

ANSWER: a

111. Which of the following abnormalities is known to make people more sensitive to experiencing the MSG symptom complex?

- a. obesity
- b. asthma
- c. diabetes
- d. hypertension

ANSWER: b

112. What additive common to Asian foods is thought to be associated with acute, temporary intolerance reactions?

- a. nitrites
- b. carotenoids
- c. monosodium glutamate
- d. polybrominated biphenyl

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ANSWER:

c

113. Which of the following is the most common use for adding carotenoids to foods?

- a. to colour the food
- b. to extend shelf life
- c. to inhibit microbial growth
- d. to inhibit nitrosamine formation

ANSWER:

a

114. Which of these sweeteners should be avoided by people with PKU?

- a. neotame
- b. sucralose
- c. aspartame
- d. acesulfame-K

ANSWER:

c

115. Which of the following is a feature of aspartame?

- a. Its sweetness increases with heat.
- b. It is made up of three amino acids.
- c. It is a good source of dietary protein.
- d. Its breakdown products include methanol and formaldehyde.

ANSWER:

d

116. Which of these processes happens when beverages containing aspartame are stored at warm temperatures for prolonged periods?

- a. Methanol is produced.
- b. Ketone bodies appear.
- c. The alanine becomes oxidized.
- d. The sweetness level becomes exaggerated.

ANSWER:

a

117. High intakes of aspartame are known to do which of the following?

- a. inhibit digestive tract enzymes
- b. become unsafe for most of the population
- c. decrease the threshold for seizures in epilepsy
- d. become metabolized into more than six times as much methanol as that from consumption of tomato juice

ANSWER:

c

118. Which of the following foods represents a common source of acrylamide intake in Canada?

- a. raw fruits
- b. french fries
- c. raw vegetables
- d. grilled seafood

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ANSWER: b

119. Which of these substances is a carcinogen known to be produced when high-carbohydrate foods are cooked at high temperatures?

- a. dioxin
- b. acrylamide
- c. carrageenan
- d. nitrosamine

ANSWER: b

120. To determine quickly if a particular glass or ceramic vessel is safe for long-term cooking in a microwave oven, place the empty container in the microwave and “cook” it for one minute. How should the container feel to be considered safe?

- a. cool
- b. lukewarm
- c. warm
- d. hot

ANSWER: a

121. Why should consumers use only specialized glass or ceramic containers rather than common packaging materials to heat foods in microwave ovens?

- a. Several types of common packaging materials may catch on fire.
- b. Many common packaging materials contain traces of PCBs, which are released into the food.
- c. There are substances in common packaging materials that can migrate into the food and present a health hazard.
- d. Many substances in common packaging materials interact with flavour components in food and impart off-flavours.

ANSWER: c

122. Which of the following toxic substances are formed from production of paper products used in food packaging?

- a. PBBs
- b. URPs
- c. dioxins
- d. BHT and BHA

ANSWER: c

123. Which of these substances is a food contaminant formed during chlorine treatment of wood used in the manufacture of paper?

- a. dioxin
- b. alginate
- c. acrylamide
- d. hydrochloride

ANSWER: a

124. Which of these substances is the standard chemical used to remove caffeine from coffee beans?

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- a. nitric acid
- b. sodium propionate
- c. methylene chloride
- d. polybrominated biphenyl

ANSWER:

c

125. Which of the following is an example of an indirect food additive?

- a. nitrites
- b. vitamin E
- c. irradiation
- d. tin from the can

ANSWER:

d

126. What classification is given to a substance that leaches from the inside lining of a can into the fruit, resulting in an off-flavour?

- a. direct additive
- b. indirect additive
- c. migratory contamination
- d. peripheral contamination

ANSWER:

b

127. Which of the following is associated with the chlorination of public water systems?

- a. It reduces waterborne illnesses.
- b. It has a high cost-to-benefit ratio.
- c. It imparts a pleasant taste to the water.
- d. It reduces dental caries formation in children.

ANSWER:

a

128. What is meant by potable water?

- a. water fit for drinking
- b. water that must be boiled before drinking
- c. water that must be chlorinated before drinking
- d. water suitable only for use on lawns and gardens

ANSWER:

a

129. Which of these substances is commonly added to public water supplies to disinfect the water?

- a. ozone
- b. fluoride
- c. chlorine
- d. penicillin

ANSWER:

c

130. Which of the following minerals gives potable water a metallic taste?

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- a. potassium
- b. calcium
- c. manganese
- d. phosphorus

ANSWER:

c

131. Which of the following is an accurate description of home water treatments?

- a. Activated carbon filters are effective in removing chlorine.
- b. Most home filtration systems are highly efficient at removing virtually all types of contaminants.
- c. Boiling the water is effective at removing organic chemicals as well as killing microorganisms.
- d. Most home filtration systems combine the processes of heavy metal removal, killing of microorganisms, softening of the water, and addition of enhancers.

ANSWER:

a

132. Water that has the odour of “rotten eggs” most likely contains which of the following contaminants?

- a. sulphur
- b. dioxins
- c. *Giardia*
- d. *Cryptosporidium*

ANSWER:

a

133. Which of these is the chief purpose of using ozone as a commercial water treatment?

- a. Ozone kills microorganisms.
- b. Ozone complexes with heavy metals.
- c. Ozone stabilizes the carbon filtration process.
- d. Ozone promotes chlorine dissipation and thus enhances taste.

ANSWER:

a

134. What is the average yearly intake (in litres), per person, of bottled water in Canada?

- a. 5 L
- b. 25 L
- c. 65 L
- d. 175 L

ANSWER:

c

135. Which of these is the process by which water is purified by pressurizing it and forcing it across a membrane?

- a. ozonation
- b. distillation
- c. reverse osmosis
- d. activated carbon filtration

ANSWER:

c

136. Which of these is the most common source of bottled water?

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- a. glacier run-off
- b. springs
- c. rivers in the wilderness
- d. municipal water supplies

ANSWER:

b

137. Which of the following accurately describes bottled waters that are sold to consumers?

- a. Bottled water is classified as a food and is regulated by Health Canada.
- b. Bottled water is regarded as a Natural Health Product.
- c. Bottled water is classified as an indirect additive to the diet, and is regulated by the CFIA.
- d. Government regulations mandate that labels on bottled water reveal heavy metal content.

ANSWER:

a

138. Approximately what percentage of our fresh water supply is used directly by the residential sector?

- a. 2 percent
- b. 10 percent
- c. 30 percent
- d. 55 percent

ANSWER:

b

139. Improvements in nutrient composition, such as when corn is genetically modified to contain higher amounts of its limiting amino acids, is a strategy known as which of the following?

- a. biofortification
- b. genetic enrichment
- c. reverse DNA enrichment
- d. CFIA-approved enrichment

ANSWER:

a

140. Genetic engineering of broccoli to increase the selenium content has inadvertently lowered the content of which of the following compounds that is normally found in broccoli?

- a. fibre
- b. vitamin C
- c. sulphoraphane
- d. chlorophyll

ANSWER:

c

141. Rennin, an enzyme used by the food industry for the production of cheese, is obtained most cost-effectively from which of the following sources?

- a. calf stomach
- b. pig intestines
- c. genetically engineered viruses
- d. genetically engineered bacteria

ANSWER:

d

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142. List the major functions of the following agencies that monitor the nation's food supply: CFIA, AAFC, and Health Canada.

ANSWER: Answers may vary.

143. Explain the difference between toxicity and hazard.

ANSWER: Answers may vary.

144. Cite examples of outbreaks of food-borne infections from consumption of food products sold by the food industry.

ANSWER: Answers may vary.

145. Describe one well-publicized outbreak of food-borne infection that happened in 2012.

ANSWER: Answers may vary.

146. Describe several known outbreaks of food poisoning in North America since the year 2000 that also affected foods sold in Canada.

ANSWER: Answers may vary.

147. List at least six symptoms that are associated with the contraction of food-borne illness.

ANSWER: Answers may vary.

148. List three major pathogenic microbes that are transmitted by foods; describe their food sources, symptoms of sickness, and methods of prevention.

ANSWER: Answers may vary.

149. Describe food-borne infections that are early onset (within 1 to 2 days), mid-onset (3 to 6 days), and late onset (after 7 days).

ANSWER: Answers may vary.

150. What steps can consumers take to ensure food safety in the kitchen?

ANSWER: Answers may vary.

151. What are mad cow disease and H1N1 influenza, and how do they affect human beings? How can you reduce risk of contracting these disorders?

ANSWER: Answers may vary.

152. What precautions should consumers take when selecting and consuming seafood?

ANSWER: Answers may vary.

153. List safe-handling practices for milk and cheeses, eggs, honey, mixed salads, seafood, and picnic foods.

ANSWER: Answers may vary.

154. Discuss consumer concerns about irradiation.

ANSWER: Answers may vary.

155. Explain the precautions that should be taken to minimize the risk of traveller's diarrhea.

ANSWER: Answers may vary.

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156. What is food irradiation and how is it regulated? Explain the pros and cons of irradiation as a food-processing method.

ANSWER: Answers may vary.

157. What steps can consumers take to minimize nutrient losses during food preparation?

ANSWER: Answers may vary.

158. Describe the effects of environmental contaminants, including the bioaccumulation of toxic substances.

ANSWER: Answers may vary.

159. Discuss the importance of mercury in the food chain. What population groups are most susceptible to mercury toxicity? What are the recommendations concerning consumption of foods containing mercury?

ANSWER: Answers may vary.

160. Give several examples of naturally occurring toxicants in foods and appropriate methods to minimize exposure to them.

ANSWER: Answers may vary.

161. How are pesticides regulated and monitored in the Canadian food supply? How can pesticide residues be monitored in the body?

ANSWER: Answers may vary.

162. Discuss the concerns of the public regarding the use of pesticides. Describe methods to minimize intake of pesticide residues on foods.

ANSWER: Answers may vary.

163. Describe the use of alternatives to conventional chemical application for the control of agricultural pests.

ANSWER: Answers may vary.

164. Discuss regulations governing the production and labelling of organic foods.

ANSWER: Answers may vary.

165. What are the Canadian criteria for organically grown crops?

ANSWER: Answers may vary.

166. List several advantages for the use of food additives.

ANSWER: Answers may vary.

167. What is the meaning and significance of the Delaney Clause? Why is it believed by many to be too strict and inflexible?

ANSWER: Answers may vary.

168. Explain the food manufacturer's responsibilities for the use of food additives.

ANSWER: Answers may vary.

169. List four appropriate uses for nutrient additives to foods.

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ANSWER: Answers may vary.

170. What are sulphites? Explain current Health Canada regulations regarding their use.

ANSWER: Answers may vary.

171. List the major antioxidant additives in the food supply and their side effects in human beings.

ANSWER: Answers may vary.

172. What are the advantages and disadvantages of using MSG in foods?

ANSWER: Answers may vary.

173. Give examples of different types of indirect food additives, and explain how they become part of the food supply.

ANSWER: Answers may vary.

174. Discuss the formation and significance of acrylamide and dioxins in food.

ANSWER: Answers may vary.

175. Discuss the use of packaging materials for foods designed to be exposed to microwave cooking. How can you determine if an unlabelled glass or ceramic container is microwave-safe?

ANSWER: Answers may vary.

176. Discuss safety concerns of consuming coffee that was decaffeinated by methylene chloride. Are there other ways to remove the caffeine?

ANSWER: Answers may vary.

177. What are the chief concerns with the use of antibiotics in livestock?

ANSWER: Answers may vary.

178. Explain the differences between groundwater and surface water as sources of drinking water.

ANSWER: Answers may vary.

179. List several unpleasant characteristics associated with safe, potable water.

ANSWER: Answers may vary.

180. Discuss the origin of common drinking water contaminants such as heavy metals, microbes, and organic toxicants.

ANSWER: Answers may vary.

181. List four common home treatments for improving the quality of water.

ANSWER: Answers may vary.

182. How does genetic engineering differ from traditional selective breeding?

ANSWER: Answers may vary.

183. Discuss how genetic engineering can be used to improve the nutritional value of foods using specific examples.

ANSWER: Answers may vary.

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184. Present examples of food crops that have been genetically engineered to produce their own pesticides.

ANSWER: Answers may vary.

185. What is “biopharming”? Provide an example.

ANSWER: Answers may vary.

186. Give examples of genetic engineering for the production of herbicide- and pesticide-resistant crops.

ANSWER: Answers may vary.

187. Present examples of food crops that have been genetically engineered to produce drugs for human beings.

ANSWER: Answers may vary.

188. Provide examples of the potential problems and concerns with biotechnology.

ANSWER: Answers may vary.

189. Present six arguments each on the pros and the cons of genetic engineering.

ANSWER: Answers may vary.

190. Explain the role of Health Canada in regulating food produced through biotechnology.

ANSWER: Answers may vary.

191. Present eight arguments each that are in support of, and in opposition to, food biotechnology.

ANSWER: Answers may vary.

- a. bST
- b. BHT
- c. Surface
- d. Health Canada
- e. MSG
- f. GRAS
- g. Ground
- h. Sulphite
- i. Hazard
- j. Nitrite
- k. Toxicity
- l. Solanine
- m. Hepatitis
- n. Goitrogen
- o. Nitrosamines
- p. Bioaccumulation
- q. Margin of Safety
- r. Tolerance Level
- s. Methylene chloride
- t. Intentional additives

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192. Term that designates the ability of a substance to harm living organisms if enough is consumed

ANSWER: k

193. Term designating that a substance is possibly harmful under normal use conditions

ANSWER: i

194. Typical food-borne infection that results from eating undercooked or raw shellfish

ANSWER: m

195. The act of concentrating contaminants within the flesh of animals high on the food chain

ANSWER: p

196. Toxic compound common in cabbage, turnips, and radishes

ANSWER: n

197. Poisonous narcotic-like substance present in potato sprouts

ANSWER: l

198. Term that describes the maximum amount of a pesticide residue permitted on a food when the chemical is used according to directions

ANSWER: r

199. Source of water that is contaminated slowly but more permanently

ANSWER: g

200. Acronym used for food additives long believed to be safe

ANSWER: f

201. Zone between the normal concentration used and that in which a hazard exists

ANSWER: q

202. Class of substances that are purposely added to foods

ANSWER: t

203. Substance added to cured meats to preserve colour

ANSWER: j

204. Carcinogenic substances formed within the stomach

ANSWER: o

205. Organization that is responsible for approving food colours

ANSWER: d

206. A food additive known to destroy thiamin

ANSWER: h

Name _____ Class _____ Date _____
: _____ : _____ e: _____

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207. A preservative commonly used in snack foods to slow the development of off-flavours, odours, and colour changes

ANSWER: b

208. Flavour enhancer

ANSWER: e

209. Hormone banned in Canada that promotes growth and milk production in cows

ANSWER: a

210. Substance used to remove caffeine from coffee

ANSWER: s

211. Source of water easily contaminated but constantly replaced

ANSWER: c