The Science of Nutrition, Cdn. Ed. **(Thompson)**
Chapter 1   The Role of Nutrition in Our Health

1) Which of the following BEST describes nutrition?
A) the science of growing healthy foods
B) the science of food and how food nourishes our bodies and influences health
C) an ancient science that dates back to the fourteenth century
D) the science of food and food processing
Answer: B
Type: MC
Topic: What is the Science of Nutrition and How Did It Evolve?
Skill: Remember/Understand

2) Which BEST defines chronic disease?
A) a disease that comes on slowly and can persist for years
B) a condition that has a rapid onset and is easily cured
C) a disease caused by a microorganism
D) a disease that affects only elderly people
Answer: A
Type: MC
Topic: How Does Nutrition Contribute to Health?
Skill: Remember/Understand

3) Which of the following is considered the primary link between poor nutrition and chronic disease in Canada?
A) lack of vitamins and minerals
B) excessive alcohol intake
C) obesity
D) underweight
Answer: C
Type: MC
Topic: How Does Nutrition Contribute to Health?
Skill: Remember/Understand

4) Which of the following is a goal of the Integrated Pan-Canadian Healthy Living Strategy?
A) develop Dietary Reference Intakes (DRIs)
B) promote health disparities
C) improve overall health outcomes
D) regulate health care spending
Answer: C
Type: MC
Topic: How Does Nutrition Contribute to Health?
Skill: Remember/Understand

5) Which of the following classes of nutrients provides energy to the body?
A) carbohydrate
B) vitamins
C) minerals
D) water
Answer: A
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

6) Which element makes protein different from carbohydrate and fat?
A) carbon
B) hydrogen
C) nitrogen
D) oxygen
Answer: C
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

7) Which of the following is classified as a micronutrient?
A) carbohydrates
B) vitamins
C) lipids
D) alcohol
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

8) _____ are examples of inorganic nutrients.
A) Vitamins
B) Lipids
C) Carbohydrates
D) Minerals
Answer: D
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

9) Which of the following would contain organic nutrients?
A) calcium supplement
B) water
C) whey protein
D) iron supplement
Answer: C
Type: MC
Topic: What are Nutrients?
Skill: Apply

10) Jasmine consumed a breakfast that contained 85 grams of carbohydrate, 20 grams of protein, and 18 grams of fat. How many kilocalories did Jasmine eat at breakfast?
A) 492 kilocalories
B) 582 kilocalories
C) 917 kilocalories
D) 1 107 kilocalories
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Apply

11) For dinner, Marcus consumes 255 grams of carbohydrate, 70 grams of protein, and 50 grams of fat. In addition, Marcus decides that he wants a glass of wine with his meal. If he drinks one glass of wine containing 8 grams of alcohol, how many total kilocalories does he consume in this meal?
A) 56 kilocalories
B) 540 kilocalories
C) 1 675 kilocalories
D) 1 806 kilocalories
Answer: D
Type: MC
Topic: What are Nutrients?
Skill: Apply

12) Christopher's lunch contains 121 grams of carbohydrate, 40 grams of protein, and 25 grams of fat. Approximately what percent of kilocalories in this meal come from fat?
A) 19%
B) 26%
C) 34%
D) 42%
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Apply

13) Which of the following are examples of carbohydrate rich foods?
A) butter and corn oil
B) beef and pork
C) wheat and lentils
D) bacon and eggs
Answer: C
Type: MC
Topic: What are Nutrients?
Skill: Apply

14) Which of the following is classified as a lipid?
A) selenium
B) sterol
C) glycine
D) glucose
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

15) Amino acids are the building blocks for which of the following nutrients?
A) carbohydrate
B) lipid
C) vitamin
D) protein
Answer: D
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

16) Which of the following nutrients yields the most energy per gram?
A) carbohydrate
B) lipid
C) protein
D) vitamin
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

17) Which of the following BEST describes minerals?
A) Minerals are broken down easily during digestion.
B) Minerals are easily destroyed by heat and light.
C) Minerals are inorganic micronutrients found in a variety of foods.
D) Minerals are nutrients needed in large amounts by the body.
Answer: C
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

18) Which of the following is a primary function of dietary protein?
A) serves as a primary fuel source for the brain
B) provides a large energy store
C) regulates metabolism and fluid balance
D) serves as a primary source of energy for the body
Answer: C
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

19) Carbohydrates are composed of chains of carbon, hydrogen and:
A) nitrogen.
B) oxygen.
C) saccharides.
D) glycerol.
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

20) Which of the following is a UNIQUE property of lipids compared with the properties of other macronutrients?
A) Lipids are soluble in water.
B) Lipids are an important source of energy for the body.
C) Lipids are comprised of carbon, hydrogen, and oxygen.
D) Lipids yield more calories per gram than carbohydrate or protein.
Answer: D
Type: MC
Topic: What are Nutrients?
Skill: Analyze

21) Which of the following is an example of an organic micronutrient?
A) folate
B) calcium
C) fat
D) iron
Answer: A
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

22) Vitamin C and the B-vitamins are examples of:
A) nonessential vitamins.
B) water -soluble vitamins.
C) fat-soluble vitamins.
D) trace vitamins.
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

23) _____ are inorganic nutrients that are NOT broken down by the human body or
destroyed by heat.
A) Vitamins
B) Minerals
C) Proteins
D) Fats
Answer: B
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

24) Which of the following describes the vitamins A, D, E, and K?
A) excreted via the urine
B) soluble in water
C) should be consumed daily
D) can be stored in the body
Answer: D
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

25) Which of the following is a characteristic of water-soluble vitamins?
A) Excesses of these vitamins are easily excreted.
B) Excesses of these vitamins are not toxic to the body.
C) Toxicity from food intakes of these vitamins is common.
D) These vitamins provide a source of energy.
Answer: A
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

26) Which of the following nutrients is classified as a major mineral?
A) calcium
B) iron
C) iodine
D) copper
Answer: A
Type: MC
Topic: What are Nutrients?
Skill: Remember/Understand

27) The standard used to estimate the daily nutrient needs of half of all healthy individuals is:
A) EAR.
B) AI.
C) RDA.
D) UL.
Answer: A
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Remember/Understand

28) An RDA is established based on the:
A) EAR.
B) DRI.
C) UL.
D) AI.
Answer: A
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Remember/Understand

29) The Dietary Reference Intakes (DRIs) were established to refocus nutrient recommendations toward preventing:
A) nutrient deficiencies.
B) infectious diseases.
C) undernutrition.
D) chronic diseases.
Answer: D
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Remember/Understand

30) The _____ represents the average daily nutrient intake level that meets the nutrient requirements for 97% to 98% of healthy individuals.
A) EAR
B) RDA
C) UL
D) AI
Answer: B
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Remember/Understand

31) The AMDR for fat is:
A) 20-35%.
B) <10%.
C) 10-35%.
D) 45-65%.
Answer: A
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Remember/Understand

32) The AMDR for protein is:
A) 20-35%.
B) <10%.
C) 10-35%.
D) 45-65%.
Answer: C
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Remember/Understand

33) What is a significant limitation to most dietary assessment tools?
A) They provide limited information on current nutrient intakes.
B) They are easy to administer.
C) They cannot be applied to the majority of foods.
D) They rely on a person's ability to self-report accurately.
Answer: D
Type: MC
Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?
Skill: Evaluate

34) Which of the following dietary tools requires both training of the client as well as explicit take-home instructions to the client?
A) diet history
B) twenty-four-hour recall
C) food-frequency questionnaire
D) diet records
Answer: D
Type: MC
Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?
Skill: Remember/Understand

35) In malnutrition, a primary deficiency is one in which:
A) there is inadequate intake of a nutrient.
B) the person cannot absorb a nutrient.
C) the nutrient is not utilized by the body.
D) too much of the nutrient is secreted from the body.
Answer: A
Type: MC
Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?
Skill: Remember/Understand

36) Your friend would like some professional advice on a diet plan for weight loss. Which of the following professionals would be the BEST for them to consult?
A) Registered Dietitian (RD)
B) PhD in nutrition
C) Medical doctor (MD)
D) Nutritionist
Answer: A
Type: MC
Topic: Nutrition Advice: Whom Can You Trust?
Skill: Evaluate

37) Which of the following is a true anthropometric test?
A) body composition
B) waist circumference
C) hemoglobin levels
D) urine sample
Answer: B
Type: MC
Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?
Skill: Remember/Understand

38) Which of the following is guaranteed to have completed a four-year university degree specializing in nutrition?
A) Nutritionist
B) Registered Dietitian
C) Naturopath
D) Physician
Answer: B
Type: MC
Topic: Nutrition Advice: Whom Can You Trust?
Skill: Remember/Understand

39) Which of the following government health agencies is responsible for regulating the use of natural health products?
A) Canadian Food Inspection Agency
B) Health Canada
C) Public Health Agency of Canada
D) Canadian Public Health Association
Answer: B
Type: MC
Topic: Nutrition Advice: Whom Can You Trust?
Skill: Remember/Understand

40) Which of the following organizations would deal with a harmful bacteria found in the food supply?
A) Health Canada
B) Canadian Food Inspection Agency
C) Centre for Health Promotion
D) Office of Nutrition Policy and Promotion
Answer: B
Type: MC
Topic: Nutrition Advice: Whom Can You Trust?
Skill: Evaluate

41) The second step of the scientific method is:
A) observing and describing a phenomenon.
B) testing a research question or hypothesis.
C) generating a hypothesis.
D) collecting data.
Answer: C
Type: MC
Topic: Research Study Results: Who Can We Believe?
Skill: Remember/Understand

42) A(n) _____ represents a scientific consensus as to why a particular phenomenon occurs.
A) alternate hypothesis
B) experiment
C) hypothesis
D) theory
Answer: D
Type: MC
Topic: Research Study Results: Who Can We Believe?
Skill: Remember/Understand

43) The type of study that observes a large population to determine factors that may influence nutritional habits and disease trends is called a(n):
A) case-controlled study.
B) clinical trial.
C) epidemiological study.
D) animal study.
Answer: C
Type: MC
Topic: Research Study Results: Who Can We Believe?
Skill: Remember/Understand

44) Dr. Sullivan is conducting a clinical trial to determine if vitamin Z can improve test performance of students in an introductory university/college nutrition course. Dr. Sullivan puts all the students' names in a hat and draws names to determine if they will be placed in the control or the experimental group. The experimental group receives a capsule of vitamin Z and the control group a "sugar pill" that tastes and looks identical to the vitamin Z capsule. Neither Dr. Sullivan nor the participants know who is receiving which treatment. This experiment is best described as:
A) single-blind, with random selection, and without a placebo.
B) double-blind, with non-random, and placebo-controlled.
C) single-blind, with random selection, placebo-controlled.
D) double-blind, with random selection, and placebo-controlled.
Answer: D
Type: MC
Topic: Research Study Results: Who Can We Believe?
Skill: Apply

45) At the end of a research study on product X, there is a note saying the authors were sponsored by the company that makes product X. Which of the following best describes the

potential concern?
A) a use of testimonials
B) a conflict of interest
C) a misinterpretation of the results
D) a poor research design
Answer: B
Type: MC
Topic: Research Study Results: Who Can We Believe?
Skill: Apply

46) The Canadian organization of food and nutrition professionals is called:
A) Dietitians of Canada
B) Canadian Nutrition Society
C) Canadian Public Health Association
D) Nutritionists of Canada
Answer: A
Type: MC
Topic: Nutrition Advice: Whom Can You Trust?
Skill: Remember/Understand

47) A group of your peers explain to you that they are worried about developing osteoporosis later in life. They have heard that calcium is important for strong bones and ask you for advice on their calcium intakes. You suggest they consume:
A) slightly more than the upper intake limit.
B) between the recommended dietary allowance and the upper limit.
C) at least the estimated average requirement.
D) less than the recommended dietary allowance.
Answer: B
Type: MC
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Apply

48) A researcher wants to use twenty-four-hour dietary recalls to evaluate the participants' dietary habits. You question if this is the most appropriate method because twenty-four-hour recalls:
A) are very time-consuming to use.
B) are very costly to collect.
C) do not assess servings sizes.
D) do not measure usual food intakes.
Answer: D
Type: MC
Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?
Skill: Evaluate

49) Which of the following is responsible for providing advice and information on the nutritional value of foods?
A) The Food Directorate
B) The Office of nutrition Policy and Promotion
C) The Canadian Food Inspection Agency
D) The Public Health Agency of Canada
Answer: A
Type: MC
Topic: Nutrition Advice: Whom Can You Trust?
Skill: Remember/Understand

50) Which of the following is the leading cause of death in Canada?
A) heart disease
B) stroke
C) diabetes
D) cancer
Answer: D
Type: MC
Topic: How Does Nutrition Contribute to Health?
Skill: Remember/Understand

51) Compare and contrast the earliest nutritional discoveries to current trends in nutrition research and health promotion. Why has the focus shifted?
Answer: Initially the science of nutrition focused on identifying and preventing diseases that occurred as a result of nutritional deficiencies. The focus has now shifted to supporting health and preventing and treating chronic diseases.
Type: SA
Topic: What is the Science of Nutrition and How Did It Evolve?
Skill: Analyze

52) How do you define health? Discuss how nutrition is related to overall health.
Answer: The definition of health has evolved to include physical, emotional and spiritual components. Nutrition plays an important role in health as it can directly cause some diseases and influence the development of other diseases.
Type: SA
Topic: How Does Nutrition Contribute to Health?
Skill: Remember/Understand

53) A long-distance runner decides to consume a diet where 40% of total calories come from protein. What are the concerns with this course of action?
Answer: A diet that consists of 40% protein would exceed the upper limit of 35% according to the acceptable macronutrient distribution range. Furthermore, carbohydrates and fats are the primary energy sources for the body, whereas, protein is required for growth and maintenance and the regulation of metabolism.
Type: SA
Topic: What Are the Current Dietary Recommendations and How Are They Used?
Skill: Evaluate

54) Would you be more concerned about an overdose of vitamin D or vitamin C? Please give

your reasons.

Answer: I would be more concerned about an overdose of Vitamin D. Vitamin D is a fat -soluble vitamin and is more likely to accumulate in the body because it can be stored. By contrast vitamin C is a water-soluble vitamin and excesses can be excreted in the urine.

Type: SA

Topic: What are Nutrients?

Skill: Analyze

55) How can you use the dietary reference intakes to determine a healthy individual's vitamin and mineral needs?

Answer: The recommended dietary allowance or adequate intake can be used to determine the minimum intake of vitamins and minerals; and the tolerable upper intake level can be used to determine the amounts which should not be exceeded.

Type: SA

Topic: What Are the Current Dietary Recommendations and How Are They Used?

Skill: Apply

56) A health practitioner takes a series of anthropometric measurements on a client. How can they use the measurements to evaluate health?

Answer: Anthropometric measurements can be compared with standards that are specific for a person's age and gender to determine if their growth is normal. Repeated measurements taken over time on the same person can be used to evaluate growth trends.

Type: SA

Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?

Skill: Apply

57) Alcohol can inhibit the breakdown of nutrients and damage the gastrointestinal track, thus reducing the absorption of nutrients such as folate. How would you classify a folate deficiency that is due to alcoholism?

Answer: The folate deficiency is a form of undernutrition that can further be classified as a secondary deficiency because it is a consequence poor absorption due to another disorder, namely alcoholism.

Type: SA

Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?

Skill: Analyze

58) A recent animal study finds that green tea can decrease the incidence of prostate cancer in rats. What type of research study is this? Identify two limitations of this type of research study.

Answer: This study is based on model systems, inasmuch as rats, not humans were used. One limitation of model systems is that the results may not directly apply to humans. Another limitation of model systems is that they raise ethical concerns about the well-being of animals used in the studies.

Type: SA

Topic: Research Study Results: Who Can We Believe?

Skill: Analyze

59) An Internet search about the effects of vitamin C on the common cold yields two websites. The first website was published in 2004 by a vitamin company and advertises a monthly supply of vitamin C for 50% off. The second website is a blog put out by an academic researcher at a

prominent post secondary institution and it contains several recent references to academic journals. Which would be more reliable and why?

Answer: The second website is more reliable because the author has academic credentials and the information is current and cites reliable sources. The first website may not be reliable because the company has a vested interest in trying to sell the product, and the information it contains is also likely outdated.

Type: SA

Topic: Research Study Results: Who Can We Believe?

Skill: Evaluate

60) Explain how nutrition can impact physical activity.

Answer: A nutritious diet will enable an individual to perform greater amounts of physical activity; whereas, a poor diet, due to inadequate or excessive amounts of nutrients, will cause an individual to feel tired and lethargic and will negatively impact their performance.

Type: SA

Topic: How Does Nutrition Contribute to Health?

Skill: Analyze

61) Compare and contrast the four primary types of dietary intake tools and include the use and limitations of each.

Answer: Diet History: Can identify nutrition or eating problems and highlight an individual's needs. Trained nutrition professional uses an interview or questionnaire. Is limited because it relies on self-reported data, is time consuming, and requires a qualified professional to administer.

Twenty-Four-Hour Recalls: Assess recent intake. Trained professional interviews a person and records responses. Limited because self-reported, requires participant to remember foods and serving sizes, and only looks at one day; therefore, may not represent usual intakes.

Food-Frequency Questionnaire: Can be used to determine dietary patterns over a specific time period. Questionnaire with lists of foods and questions regarding the number of times the foods have been eaten over the time period of interest. Limited because it requires self-reporting and it might not include information about the amounts consumed.

Diet Records: Should indicate usual dietary and activity patterns. The client completes the record. Can be done with a scale and include food labels to increase accuracy. Limited because the client is responsible for completing the record accurately, it is burdensome which increases the chance it will not be completed completely and accurately, and analysis is time consuming and costly.

Type: ES

Topic: How Do Nutrition Professionals Assess the Nutritional Status of Clients?

Skill: Evaluate

62) You are interested in the effects of X, a new natural health product on weight loss. Formulate a hypothesis, design a research study to test product X and describe the steps you would take to implement it.
Answer: Hypothesis: Overweight adults that consume product X daily will experience weight loss.
Use a clinical trial that is double-blind, placebo-controlled and based on random assignment.
Recruit overweight subjects to participate in the study.
Use a large enough sample size to ensure results are not due to chance.
Randomly assign participants to the product X treatment group or the placebo group, ensuring neither the researcher nor the subjects know which group they are in.
Control for other variables such as dieting, exercise, medications.
Administer the treatment/placebo for 12 weeks.
Collect data - measure body weight at the beginning and end using the most accurate method available to you.
Analyze data and display in a meaningful manner (graph or table).
Refine hypothesis if necessary.
Disseminate information so study can be repeated by others to confirm result.
Type: ES
Topic: Research Study Results: Who Can We Believe?
Skill: Create

63) The Pan-Canadian Healthy Living Strategy has four strategic directions. Imagine that your university or college decides to use these strategies to promote healthy eating. Create an example of how each could be implemented.
Answer: Leadership and policy development: School policies to improve the nutritional quality of foods available in the vending machines and school cafeterias.
Knowledge development and transfer: Encourage nutrition-related research in an undergraduate nutrition course and share with the whole university or college by posting descriptions and results on a website.
Community development and infrastructure: Provide free transportation to grocery stores to make it easier for students living in residence to buy healthy foods.
Public information: Provide free nutrition seminars to the students, faculty, and staff to educate them on healthy eating strategies.
Type: ES
Topic: How Does Nutrition Contribute to Health?
Skill: Create