20

King Saud University
College of Applied Medical Sciences
Department of Community Health Sciences

CHS226: Principles of Nutrition
First Midterm Exam (Students' Model)

Time allowed: (60 minutes) Date: /1438

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Part I: Write True or False between brackets and correct the false question (s) by underlining the false word(s) and write it (them) under each question. Non corrected false question (s) will be given zero: **Carefully transfer your answers to the answer sheet that will be checked and marks will be given based on your answers in the answer sheet.**

(marks)

1. There are **five** (**six**) Classes of nutrients
2. **Micronutrients** (**macronutrients)** are called proximate principles
3. Water and minerals are **Organic** (**inorganic**) nutrients
4. Disease conditions and some drugs can cause **primary** **(secondary)** nutrient deficiency
5. Primary nutrient deficiency can be assessed using dietary studies
6.
7.
8. During **mechanical** **(chemical) digestion,** enzymes break down macromolecules into smaller molecules to be efficiently absorbed.
9. In the stomach, salivary enzymes are digested like other proteins
10. When eaten alone, **fibers** (**carbohydrates**) leave the stomach the most rapidly, followed by protein, fat, and **carbohydrates** (**fibers**)
11. Pancreatic enzymes are synthesized in **active** (**inactive**) forms to prevent auto degradation of the pancreas
12. Inside the intestinal villi, there are lacteals which absorb digested fat
13.
14.
15. Body weight reflects adequacy of energy intake but is not a reliable indicator of macronutrient or micronutrient adequacy.
16. Basal metabolic rate represents about **10**% (**60-70%)** of daily total energy expenditure
17. Thermic effect of food represents about 10% of daily total energy expenditure
18. BMR; is higher in men than women and in **nonathletics than athletics** (**athletics than nonathletics**)
19. **Short and wide** people have higher BMR than **tall and thin** (vise versa)
20. Caffeine increases the BMR
21. **Thermic effect of food** (**Physical activity**) is the most variable of the Total Energy Expenditure

With my best wishes
Dr Mohamed Fawzi

Student NO in ILOs Excel Sheet:----------

Part II: Circle the correct answer: **Carefully transfer your answers to the answer sheet that will be checked and marks will be given based on your answers in the answer sheet.**

(marks)

1. Proteins, Carbohydrates, and Fats are:
   a) Micronutrients
   b) **Nutrients giving energy**
   c) Thermic effect of foods
   d) Inorganic nutrients
2. The followings are organic nutrients ***EXCEPT:***
   a) carbohydrates,
   b) fats,
   c) proteins
   d) **minerals**
3.
4.
5. It contains two types of secretions, Serous that containing amylase and Mucus to stick food mass together to facilitate swallowing
   a) Bile
   b) **Saliva**
   c) Pancreatic secretion
   d) Gastric secretion
6. Most nutrients absorption takes place in the:
   a) Duodenum
   b) Jejunum
   c) **Ileum**
   d) Ilium
7. An emulsifier contains cholesterol and leaves the gallbladder in squirts
   a) **Bile**
   b) Saliva
   c) Pancreatic secretion
   d) Gastric secretion
8. Crossing the intestinal wall through openings or through channel proteins: -
   a) chemical digestion
   b) **simple diffusion**
   c) facilitated diffusion
   d) active transport
9. Disposal of residues of carbohydrates and amino acids that remain in the chyme through production of Short Chain Fatty Acids
   a) **colonic salvage**
   b) Thermic effect of foods
   c) chemical digestion
   d) simple diffusion
10. They stimulate colonocyte proliferation and enhance absorption of electrolytes and water
    a) **Short Chain Fatty Acids**

b) Pancreatic secretions
c) Gastric secretions
d) Salivary amylases

11.
12.

13. The energy provided by each gram of carbohydrates, proteins, fats, and minerals are:
a) 4, 9, 4, 0 Kcal; respectively
b) **4, 4, 9, 0 Kcal; respectively**
c) 9, 4, 4, 0 Kcal; respectively
d) 4, 4, 4, 0 Kcal; respectively

14. When the energy intake is equal to the energy expenditure, the body will be in:
a) **isocaloric balance and its weight will be maintained**
b) isocaloric balance and its weight will decrease
c) positive caloric balance and its weight will increase
d) negative caloric balance and its weight will decrease

15. The followings are ***TRUE*** about basal metabolic rate ***EXCEPT***:-
a) Women have lower BMR than males
b) Hyperthyroidism increases the BMR
c) fever increases the BMR
d) **BMR decreases in late stages of pregnancy**

16. It is a food group that healthy adults can consume 6 –11 servings, and provides them with carbohydrates, thiamin, folic acid and dietary fiber.
a) **Bread, Cereal, Rice & Pasta Group**
b) Fruit Group
c) Vegetable Group
d) Milk, Yogurt & Cheese Group

17. It is a food group that healthy adults can consume 3-5 servings, and provides them with carbohydrates, vit A , vit C and dietary fiber.
a) Bread, Cereal, Rice & Pasta Group
b) Fruit Group
c) **Vegetable Group**
d) Milk, Yogurt & Cheese Group

18. It means **"sufficient energy and enough of all nutrients required by healthy people"**
a) **Adequacy**
b) Balance
c) Variety
d) Moderation

19. It means "**enough but not too much of a nutrient"**
a) Adequacy
b) Balance
c) Variety
d) **Moderation**

Part III: writing the question number from column (A) beside its correct answer in column (B). **Carefully transfer your answers to the answer sheet that will be checked and marks will be given based on your answers in the answer sheet.**

(marks)

#	Column (A)
1.	**Nutrients**
2.	**subclinical nutrient deficiency**
3.	**primary deficiency**
4.	**Bolus**
5.	**Functions of saliva**
6.	**Lean Body Mass**
7.	**Nonexercise Activity Thermogenesis**
8.	***Calorie***
9.	***Respiratory Quotient***
10.	***Food Guide***
11.	***Food Groups***

#	Column (B)
	Chemical substances obtained from food and used in the body for growth or metabolism
	a deficiency in the early stages, before the signs have appeared
	caused by inadequate dietary intake of a nutrient
	a mouthful of food that has been swallowed
	moisten foods, taste function, antimicrobial action and buffering action that protects the teeth
	includes fat that acts as fuel for energy production but does not include storage fat (S/C fat or fats surrounding internal organs)
	energy expended during activities of daily living
	amount of heat energy required to raise the temperature of 1 ml of water at 15 °C by 1°C
	volume of CO2 expired/volume of O2 consumed
	Nutrition education tool translating scientific knowledge and dietary recommendations into an understandable form for use by those who have little or no training in nutrition.
	collection of foods that share similar nutritional properties or biological classifications

Part IV: Fill the following blanks with the correct word (s)**:** **(marks)**

1. The main functions of foods are: **(1) Physiological, (2) Social and (3)Psychological functions**
2. Methods of nutrition assessment include: **(1) dietary studies, (2) physical (clinical) examination, (3) laboratory (biochemical) tests, and (4) anthropometric data**
3. Nutrient deficiency can be either: **(1) subclinical, (2) primary, or (3) secondary deficiency**
4. There are two types of digestion: **(1) Mechanical and (2) Chemical digestion**
5.

calculate the followings for a male engaged in Light active; height= 175 cm

1. The ideal body weight=	(height in cm -100) – {(height in cm) -150)/4}	68.8
2. Basal Metabolic rate (BMR) =	1 kcal x BW (kg) x 24 hrs	1650.0
3. BMR and energy expended in physical activity (PA)=	BMR x 1.375	2268.8
3. Thermic effect of food (TEF) =	10% of BMR+ energy expended in Physical activity	226.9
4. Total Energy Expenditure (TEE)=	BMR+ energy in PA+ TEF	2495.6
5. Distribute total energy expenditure among the following nutrients;		
Protein 15%=	374.3	
Carbohydrates (60%)=	1497.4	
Fat (25%)=	623.9	
6. calculate the amount needed from each of the above nutrients in grams:		
Protein =	93.6	
Carbohydrates=	374.3	
Fat =	69.3	

6.

Calculate the followings for a female engaged in moderate activity; height= 160 cm

1. The ideal body weight=	(height in cm -100) – {(height in cm) -150)/2}	55.0
2. Basal Metabolic rate (BMR) =	0.9 kcal x BW (kg) x 24 hrs	1188.0
3. BMR and energy expended in physical activity (PA)=	BMR x 1.55	1841.4
3. Thermic effect of food (TEF) =	10% of BMR+ energy expended in Physical activity	184.1
4. Total Energy Expenditure (TEE)=	BMR+ energy in PA+ TEF	2025.5
5. Distribute total energy expenditure among the following nutrients;		
Protein 15%=	303.8	
Carbohydrates (60%)=	1215.3	

Fat (25%)= 506.4

6. calculate the amount needed from each of the above nutrients in grams:

Protein = 76.0

Carbohydrates= 303.8

Fat = 56.3