



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2017/2018

FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR DEGREE OF MASTER OF SCIENCE IN COMMUNITY NUTRITION AND DEVELOPMENT

CITY CAMPUS

PCN 813: NUTRITION GROWTH AND DEVELOPMENT

Date: 2nd February, 2018

Time: 9.00 - 12.00pm

INSTRUCTIONS:

- Follow the instructions as attached



INSTRUCTIONS:

- **This paper is made up of three (3) sections, A, B, and C**
- **Section A has 10 marks and is composed of Multiple Choice Questions (MCQs)**
- **Section B has 10 marks and is composed of Short Answer Questions (SAQs)**
- **Section C has 40 marks and is composed of Long Answer Questions (LAQs)**
- **Answer ALL questions in sections A and B in the spaces provided in the question paper**
- **Answer TWO (2) questions in Section C, Question 15 is compulsory (each question = 20 marks) in the answer booklet provided.**

ANSWER SHEET FOR (TRUE/FALSE) QUESTIONS

REG. NO _____
COURSE CODE AND TITLE _____
SECTION _____

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1.		
2.		
3.		
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10.		

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION (10 MARKS)

Indicate with a tick, whether the following statements are true/false (10 Marks)

MCQ1 Carbohydrate has a greater energy density than either protein or fat.

MCQ2. When consumed in excess of energy needs, alcohol can be converted to body fat and stored.

MCQ3. Proteins help to regulate activities such as digestion and energy metabolism.

MCQ4 The vitamins are inorganic and they do **NOT** provide energy.

MCQ5. Lead mineral when consumed, it displaces the nutrient minerals from their workplaces in the body, disrupting body functions.

MCQ6. Infants at risk for lead poisoning should receive the recommended amount of breast milk or infant formula to provide adequate dietary calcium.

MCQ7. As protein intake increases, the need for vitamin B6 in the diet increases.

MCQ8. Vitamin E prevents breakdown of tissues.

MCQ9. Vitamin B12 is necessary for healthy blood cells.

MCQ10. Folic acid occurs naturally in foods while folate is a synthetic form of the vitamin.

SECTION B (10 Marks)

SAQ11. Define the term **metabolism** (1 Mark)

SAQ12. Define the following Dietary Reference Intakes (DRIs) as used in Nutrition. (4 Marks)

- a) Estimated Average Requirement (EAR)
- b) Recommended Dietary Allowance (RDA)
- c) Adequate Intake (AI)
- d) Tolerable Upper Intake Level (UL)

SAQ13. Outline the functions of lipids in an infant's diet. (2 Marks)

SAQ14. Healthy, full-term infants consuming breast milk or infant formula of standard dilution receive a relatively small amount of sodium but adequate for growth. State **THREE (3)** functions of sodium (3Marks)

SECTION C (40 MARKS)

Answer question 15 and any other in the answer booklet provided.

LAQ 15. Read the following Case and answer the questions that follow (20 Marks)

PL is an obese 22-year-old woman who is pregnant for the fifth time (gravid 5). PL is a single woman, who presents for her first prenatal visit at 22 weeks of gestation reporting constipation and heartburn (the normal gestation period is 40 weeks). She is para 3013. The term para has four components related to the number of viable pregnancies: 3 full-term births; no preterm births; one abortion, and 3 live children.

All of PL's newborns were delivered by cesarean section. Her first cesarean section was performed for arrest of the normal progress of labor. Subsequent cesarean sections were elective. Each of her infants weighed more than 10 pounds at birth; however, she was

never diagnosed with gestational diabetes. She is not hypertensive and has no history of pregnancy-induced hypertension during previous gestations. PL currently takes no medication; she does not smoke or drink alcohol.

PL's physical examination is as follows: Height: 5'6" (168cm); Current weight: 259 lb (118kg); Estimated pre-pregnancy weight: 242 lb (110kg); General appearance: tired-looking, obese female, poor eye contact; Abdomen: trunkal obesity; Fundal height: cannot be assessed due to obesity; Extremities: Varicose veins, edema +1.

- a) What questions about PL's weight should be asked and why? **(4 Marks)**
- b) Explain how much additional weight should PL gain through the remainder of her pregnancy? **(4 Marks)**
- c) Explain what medical complications during pregnancy are associated with obesity? **(5 Marks)**
- d) Explain what dietary and lifestyle habits contribute to heartburn and constipation in pregnant women? **(4 Marks)**
- e) What nutritional advice can be given to help the patient avoid these gastrointestinal discomforts? **(3 Marks)**

LAQ16.

- a) Discuss at least **TEN (10)** factors affecting food choices **(10 Marks)**
- b) Mary was feeling unwell and for breakfast she only ate 1 slice of bread with 1 teaspoon of peanut butter applied on it. Her diet provided 16 grams carbohydrate, 7 grams protein, and 9 grams fat. Calculate the total energy available from the diet and the percentage kcalories which each of the nutrients contributed to the total. **(10 Marks).**

AQ17. Read the following story and answer the questions that follow (20 Marks)

PL (in question 15) is obese and has already gained an excessive amount of weight, her diet should be evaluated prior to suggesting a nutrition plan. A frequently used evaluation tool is the 24-hour dietary recall. PL reported the following 24-hour dietary recall.

PL's 24-Hour Dietary Recall

Breakfast (<i>home</i>)	fried eggs	2
	Fried bacon	4 slices
	Orange juice	1 cup
	Toast/margarine	2 slices/2 tsp
Lunch (<i>fast food restaurant</i>)	Cheeseburger	¼ lb. size
	French fries	small
	Cola soda	12oz.
	Apple pie	1 piece
Snack (<i>while shopping</i>)	Sticky bun/margarine	1 small/1 tbs.
Dinner (<i>home</i>)	Fried chicken breast	4oz.
	Macaroni cheese	½ cup
	Corn on the cob	1 ear
	Margarine	3 tbs.
Snack (<i>home</i>)	Ice cream	1 cup

Total calories: 2977 kcal/day; Protein: 13% of calories; Carbohydrates:40% of calories;
Fat: 47% of calories

- Explain the concerns do you have regarding PL's diet? (4 Marks)
- Based on the preceding assessment, suggest dietary modifications for PL. (4 Marks)
- Explain whether vitamin and mineral supplement be considered for this patient or not. (4 Marks)
- Discuss maternal nutrient needs during pregnancy (8 Marks)