



UTHM

Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2023/2024**

- COURSE NAME : HUMAN NUTRITION
- COURSE CODE : BWD 22803
- PROGRAMME CODE : BWD
- EXAMINATION DATE : JULY 2024
- DURATION : 3 HOURS
- INSTRUCTIONS :
1. ANSWER ALL QUESTIONS
 2. THIS FINAL EXAMINATION IS CONDUCTED VIA
 - Open book
 - Closed book
 3. STUDENTS ARE **PROHIBITED** TO CONSULT THEIR OWN MATERIAL OR ANY EXTERNAL RESOURCES DURING THE EXAMINATION CONDUCTED VIA CLOSED BOOK

THIS QUESTION PAPER CONSISTS OF **THREE (3)** PAGES

TERBUKA

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Q1 The human body's metabolism involves a complex interplay of physiological processes that influence health and well-being.

(a) List **FOUR (4)** organs that are part of the digestive system.

(4 marks)

(b) Basal metabolic rate (BMR), refers to the minimum amount of energy a person consumes at rest to maintain essential physiological functions such as respiration, circulation, and cell repair. Explain **FOUR (4)** factors that contribute to variations in basal metabolic rate from person to person.

(8 marks)

(c) Aiman is a 30-year-old man who wants to lose weight. He decides to calculate his BMR to determine his basic calorie needs. After using an online calculator and taking into account his age, gender, height, and weight, Aiman finds that his BMR is 1,800 calories per day. Explain how Aiman can develop a personalized weight loss plan using his BMR. Include specific strategies Aiman can use to achieve a calorie deficit while account considering his BMR.

(8 marks)

Q2 Alongside proteins and fats, carbohydrates are one of the three most important macronutrients that are essential for human nutrition.

(a) You have been given the task of designing a meal plan for a diabetic. Explain how you would apply your knowledge of carbohydrates to select appropriate sources to help regulate blood glucose levels effectively.

(10 marks)

(b) Define the glycaemic index (GI).

(2 marks)

(c) Discuss the factors that influence a food's glycaemic index and provide examples of low, medium, and high GI foods.

(8 marks)

Q3 Lipids are a heterogeneous group of compounds, including fats, oils, steroids, waxes, and related compounds. They are concentrated sources of energy and structural components of cell membranes.

(a) Compare and contrast **THREE (3)** major categories of lipids.

(12 marks)

(b) Lipoproteins are round particles of fat and protein that travel in your bloodstream to the cells in your body. Compare and contrast **TWO (2)** types of lipoproteins.

(8 marks)

- Q4** Ramli, a 59-year-old man was admitted to hospital with loss of appetite, fatigue, bilateral ankle edema and shortness of breath. His examination results were:

Fasting blood sugar = 162 mg/dL (9.0 mmol/L)

Blood pressure = 160/100 mm/Hg

Body mass index (BMI) = 33

Cholesterol = 300 mg/dL (7.76 mmol/L)

Urine test (ketone) = positive, +1

- (a) Based on the given information, analyze and explain his medical assessment regarding his health status and the possible diseases that could occur with the test results.

(10 marks)

- (b) Based on your answers in **Q4(a)**, give **FIVE (5)** suggestions for improving his diet and health for each of the test results.

(10 marks)

- END OF QUESTIONS -

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