



PAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Faculty of Health and Applied Sciences

Department of Health Sciences

Human Nutrition Programme

QUALIFICATION: BACHELOR OF HUMAN NUTRITION	
QUALIFICATION CODE: 08BOHN	LEVEL: 5
COURSE: GASTRO-INTESTINAL AND ENDOCRINE PHYSIOLOGY	COURSE CODE: GEP521S
DATE: JANUARY 2019	SESSION:
DURATION: 3 Hours	MARKS: 100

SUPPLEMENTARY/ 2nd OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	DR LARAI AKU-AKAI
MODERATOR:	MS ELSABE VAN DER COLF

INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly in the provided answer booklet.
PERMISSIBLE MATERIALS
1. None

THIS QUESTION PAPER CONSISTS OF 6 PAGES (Excluding this front page)

SECTION A

Question 1

(20 marks)

Select the correct answer from the options. (1 Mark for each correct answer) (20)

- 1.1 Destruction of the hypothalamus will lead to atrophy of all the following endocrine glands **EXCEPT**:
- a. Pituitary
 - b. Parathyroid
 - c. Thyroid
 - d. Adrenals
 - e. Ovaries
- 1.2 Vitamin B12 is absorbed mainly in the:
- a. stomach
 - b. ileum
 - c. colon
 - d. jejunum
 - e. duodenum
- 1.3 The posterior pituitary or neurohypophysis releases:
- a. Gonadotropins
 - b. ACTH
 - c. Antidiuretic hormone
 - d. Thyrotropin
 - e. Prolactin
- 1.4 Which of the following hormones regulates the homeostasis of potassium and sodium?
- a. Calcitonin
 - b. Parathyroid hormone
 - c. Androgen
 - d. Aldosterone
 - e. Glucagon

- 1.5 A 45 year old woman presents with difficulty in swallowing of solid foods and liquids. Tests reveal dilation/distension of the upper oesophagus, and a beak-like tapering (narrowing) of the lower oesophagus. You correctly diagnose achalasia and fully expect to see all of the following characteristics **EXCEPT**:
- increased tone in the lower oesophageal sphincter (LES)
 - absence of a coordinated peristaltic effort down the oesophagus
 - decreased amounts of skeletal muscle along the upper third of oesophagus
 - simultaneous low pressure increases along the entire length of the oesophagus during a swallow
 - unusual odours from the mouth
- 1.6 Upper oesophagus ends in a blind pouch:
- Achalasia
 - Oesophageal atresia
 - Odynophagia
 - Gastroesophageal reflux
 - Barrett esophagus
- 1.7 Bile:
- is synthesized by the gall bladder.
 - is stored in hepatic sinusoids.
 - is solely comprised of bile salts.
 - is required for maximal fat digestion and absorption.
 - Is secreted into the large intestine.
- 1.8 During swallowing...
- all processes are consciously controlled
 - the hard palate shifts to block the upward movement of food
 - a series of peristaltic waves move the food down the oesophagus
 - the food bolus is forced down the oesophagus by gravity
 - the food is carried into the nasopharynx
- 1.9 The surface area of the intestines are increased by the following **EXCEPT**:
- villi.
 - microvilli.
 - goblet cells.
 - rugae.
 - plica (folds)

- 1.10 What prevents food from entering the nasal passages during swallowing?
- elevation of uvula and soft palate
 - contraction of pharyngeal muscles
 - apposition of vocal folds
 - elevation of epiglottis
 - elevation of trachea
- 1.11 Stools contain excess fat:
- Fistulas
 - Steatorrhoea
 - Zollinger-Ellison syndrome
 - Amoebiasis
 - Osmotic diarrhoea
- 1.12 General weakness, cold intolerance, poor appetite, and weight loss is typical of:
- Cushing's syndrome
 - Sheehan's syndrome
 - Cushing's disease
 - Adrenogenital syndrome
 - Graves' disease
- 1.13 Most common cause of chronic gastritis:
- Oesophageal atresia
 - Helicobacter pylori
 - Gastroesophageal reflux
 - Tracheoesophageal fistulae
 - Mallory Weiss syndrome
- 1.14 The most important hormone regulating renal function is:
- Antidiuretic hormone
 - Aldosterone
 - Atrial natriuretic hormone
 - Growth hormone
 - Parathyroid hormone
- 1.15 Which of the following **IS NOT** a function of hepatocytes?
- active uptake of plasma bile acids
 - synthesis of primary bile acids from cholesterol
 - conjugation secondary bile acids
 - conversion of bilirubin to urobilinogen
 - secretion of bile acids into bile canaliculi

- 1.16 All the following are endocrine glands **EXCEPT**:
- a. Pituitary
 - b. Thyroid
 - c. Spleen
 - d. Adrenals
 - e. Parathyroids
- 1.17 All of the following are common symptoms of duodenal ulcer **EXCEPT**:
- a. Hematemesis
 - b. Melena
 - c. Vomiting
 - d. Epigastric pain
 - e. Carcinoma
- 1.18 Mechanical obstruction in the intestines may be caused by all of the following **EXCEPT**:
- a. Gallstones
 - b. Fecaliths
 - c. Volvulus
 - d. Incarceration of intestinal loops in a hernia sac
 - e. Spinal cord injury
- 1.19 All of the following are major functions of the liver **EXCEPT**:
- a. Excretory
 - b. Metabolic
 - c. Storage
 - d. Neuroendocrine
 - e. Synthetic
- 1.20 In cirrhosis the liver is:
- a. Smooth and shiny
 - b. Smooth but fatty
 - c. Dark brown and rough
 - d. Nodular
 - e. Covered with fibrin or pus

Question 2 (10 marks)

Complete the sentences below with the most appropriate words or phrases.

- 2.1 The gastro-intestinal tract communicates with the respiratory tract at theand this can cause choking.

(1)

- 2.2 Choking is prevented by movement of thethat blocks food going into the airways. (1)
- 2.3 Intrinsic factor originates from and its function is (2)
- 2.4 The "blind pouch" at the beginning of the large intestine is called (1)
- 2.5 The duodenum curves and "hugs" what gland in its curve? (1)
- 2.6 The gall bladder is located and is responsible for (2)
- 2.7 The liver receives blood from the systemic circulation through the and from the intestines through the (2)

SECTION B

Question 3 (20 marks)

- 3.1 Mention the groups of salivary glands. (3)
- 3.2 Mention three (3) uses of saliva. (3)
- 3.3 Enumerate the major food groups and the final products of digestion for each. (6)
- 3.4 Describe the structure of the large intestine, mentioning its parts and characteristic features. (8)

Question 4 (26 marks)

- 4.1 Discuss nutrition balance in detail, explaining the roles of hormones in its maintenance. (10)
- 4.2 Mention the hormones that are secreted by the pituitary gland and their actions. (16)

SECTION C

Question 5 (24 marks)

- 5.1 A 12-year-old girl is brought to your office by her mother, who notes progressively worsening diarrhoea over the past 1-2 months. Stools are watery and non-bloody, also accompanied by abdominal pain, bloating and flatulence. Symptoms are found to be worse after ingestion of milk or milk-containing products. Stool ova and parasites and routine cultures are negative.
 - 5.1.1 Mention the most likely diagnosis and describe the pathology responsible for the clinical features. (4)
 - 5.1.2 Indicate which test would be most suitable to confirm your suspicion and the expected findings. (2)

- 5.2 A 53-year old male alcoholic patient with biopsy-proven hepatitis C and cirrhosis presents to the hospital with jaundice, massive ascites and significant peripheral edema, and melena (stools containing digested blood). He is confused and has asterixis ('liver flap').
- 5.2.1 What condition do you think this patient has? (1)
- 5.2.2 The probable underlying biochemical cause of his confusion is? (1)
- 5.2.3 Describe how this condition will affect his nutritional status citing some features you expect to find. (4)
- 5.2.4 What dietary advice should be given to this patient? (3)
- 5.3 A young man presents with a history of foul, bulky, frothy stools. He also complained of weight loss and progressive swelling of his feet in the last few months. He also has clinical features of loss of muscle bulk and multi-vitamin deficiencies.
- 5.3.1 What is the most possible cause of his condition? (2)
- 5.3.2 Mention four (4) situations that could be responsible for his condition. (4)
- 5.3.3 Mention what remedy can be offered for his condition. (3)

Good luck!!!