AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCE
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF SEPT-DECEMBER 2024 TRIMESTER EXAMINATIONS

UNIT CODE: PHT 137 **UNIT NAME: Human physiology, endocrine and integumentary (special exam)**

DATE: **Day/ Date/ AUGUST**
TIME: **TWO HOURS**
START: **0:00** **STOP : 0:00**

INSTRUCTIONS (physical exams)

1. **Do not write on this question paper**

(Marks and questions distribution as per program curriculum.)

INSTRUCTIONS (Online examinations)

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This online exam shall take 2 Hours
4. Late submission of the answers will not be accepted
5. Ensure your web-camera is on at all times during the examination period
6. No movement is allowed during the examination
7. Idling of your machine for 5 min or more will lead to lock out from the exam
8. The Learning Management System (LMS) has inbuilt integrity checks to detect cheating
9. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam
10. In case you have any questions call the invigilator for this exam on Tel. 0705833434 and or the Head of Department on Tel 0720491032
11. For adverse incidences please write an email to: amiu.examinations@amref.ac.ke

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SECTION A. Multiple choice questions. Answer all the questions (30 marks)

1. Which hormone is produced by the pancreas to decrease blood glucose levels?

   A) Glucagon

   B) Insulin

   C) Cortisol

   D) Epinephrine

2. Which gland is considered the "master gland" due to its role in controlling other endocrine glands?

   A) Thyroid gland

   B) Adrenal gland

   C) Pituitary gland

   D) Pineal gland

3. Which hormone is responsible for stimulating milk production in the mammary glands?

   A) Oxytocin

   B) Prolactin

   C) Estrogen

   D) Testosterone

4. The adrenal medulla secretes which of the following hormones?

   A) Aldosterone

   B) Cortisol

   C) Epinephrine

   D) Insulin

5. Which hormone helps regulate circadian rhythms?

   A) Melatonin

   B) Dopamine

   C) Glucagon

   D) Growth hormone

6. The thyroid gland requires which of the following minerals to produce its hormones?

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A) Calcium

B) Iron

C) Magnesium

D) Iodine

7. Which hormone is released in response to low blood calcium levels?

   A) Calcitonin

   B) Parathyroid hormone

   C) Glucagon

   D) Aldosterone

8. Which of the following is NOT a steroid hormone?

   A) Cortisol

   B) Estrogen

   C) Thyroxine (T4)

   D) Aldosterone

9. Growth hormone (GH) primarily affects:

   A) Bone and muscle growth

   B) Blood sugar regulation

   C) Red blood cell production

   D) Water balance

10. The hypothalamus communicates with the anterior pituitary gland through:

    A) Direct nerve connections

    B) A network of capillaries (hypophyseal portal system)

    C) Synaptic signaling

    D) Electrical impulses

11. Which hormone has anti-inflammatory effects and is released during stress?

    A) Adrenaline

    B) Cortisol

    C) Aldosterone

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D) Melatonin

12. Antidiuretic hormone (ADH) primarily acts on which organ?

    A) Liver

    B) Kidneys

    C) Heart

    D) Adrenal glands

13. Which of the following is a primary function of insulin?

    A) Increase blood glucose levels

    B) Decrease blood glucose levels

    C) Stimulate adrenaline release

    D) Regulate calcium levels

14. Oxytocin plays a significant role in:

    A) Increasing heart rate

    B) Stimulating uterine contractions

    C) Regulating blood pressure

    D) Controlling hunger

15. Hypersecretion of growth hormone in adults causes:

    A) Gigantism

    B) Acromegaly

    C) Cretinism

    D) Addison's disease

16. Which hormone is responsible for stimulating the release of thyroid hormones?

    A) Thyrotropin-releasing hormone (TRH)

    B) Adrenocorticotropic hormone (ACTH)

    C) Follicle-stimulating hormone (FSH)

    D) Prolactin

17. The posterior pituitary stores and releases:

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A) Oxytocin and ADH

B) Growth hormone and prolactin

C) Thyroxine and calcitonin

D) ACTH and FSH

18. Which of the following conditions is caused by hyposecretion of insulin?

A) Diabetes mellitus

B) Diabetes insipidus

C) Addison's disease

D) Hyperthyroidism

19. Aldosterone regulates:

A) Blood glucose levels

B) Red blood cell production

C) Water and electrolyte balance

D) Heart rate

20. A lack of iodine in the diet can lead to:

A) Gigantism

B) Hypothyroidism

C) Cushing's syndrome

D) Addison's disease

21. The hormone leptin is mainly involved in:

A) Appetite regulation

B) Water balance

C) Muscle growth

D) Blood pressure control

22. Which of the following hormones increases blood calcium levels?

A) Parathyroid hormone (PTH)

B) Calcitonin

C) Aldosterone

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D) Insulin

23. The main function of the endocrine system is to:

A) Regulate immune responses

B) Release digestive enzymes

C) Regulate bodily functions through hormones

D) Produce blood cells

24. The zona fasciculata in the adrenal cortex primarily produces:

A) Aldosterone

B) Cortisol

C) Epinephrine

D) Norepinephrine

25. Which hormone causes the liver to convert stored glycogen into glucose?

A) Insulin

B) Glucagon

C) Thyroxine

D) Cortisol

26. The hormone **calcitonin** is released by which gland?

A) Thyroid gland

B) Parathyroid gland

C) Adrenal gland

D) Pineal gland

27. Which hormone is primarily responsible for preparing the body for "fight or flight"?

A) Glucagon

B) Cortisol

C) Adrenaline

D) Serotonin

28. Which hormone is essential for T-cell development and immune function?

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A) Thymosin

B) Thyroxine

C) Epinephrine

D) Cortisol

29. Hypersecretion of cortisol can result in:

A) Addison's disease

B) Cushing's syndrome

C) Graves' disease

D) Gigantism

30. The pineal gland is responsible for the secretion of:

A) Thyroxine

B) Melatonin

C) Prolactin

D) Oxytocin

Section B: Short Answer Questions. Answer all the questions (20 marks)

1. Describe the role of the hypothalamus in regulating hormone release. (5 Marks)
2. Briefly explain how negative feedback works in hormone regulation with an example. (5 Marks)
3. Describe the effects of hyperthyroidism on metabolism. (5 Marks)
4. Describe how parathyroid hormone (PTH) affects calcium levels in the blood. (5 Marks)

Section C: Long Answer Questions. (20 Marks)

1. Explain the structure and function of the adrenal gland. (10 Marks)

2. Describe the role of the pancreas in regulating blood glucose levels**.** (10 Marks)

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