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 INTERGUMENTARY

DATE: **FRIDAY 13TH DECEMBEBR 2024**
TIME: **TWO HOURS**
START: **11.15AM** **STOP : 1.15PM**

INSTRUCTIONS (physical exams)
Do not write on this question paper
(Marks and questions distribution as per program curriculum.)

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This exam shall take 2 Hours

Section A. Multiple Choice Questions. Answer all the questions (30 Marks)

1. The following hormone is secreted by the anterior pituitary gland:
    a. Cortisol
    b. TRH
    c. CRH
    d. Vasopressin
    e. TSH

2. A ten year old boy has high levels of the growth hormone. He is likely to develop:
    a. Acromegaly
    b. Hyperglycemia
    c. Mental retardation
    d. Muscle atrophy
    e. Hyperkalaemia

3. Stimuli for aldosterone regulation includes:
    a. High sodium in the distal renal tubule
    b. High serum potassium
    c. Hypervolaemia
    d. ACTH as a potent stimulator
    e. Increased renal blood flow
4. Thyroid hormone actions include:
    a. Augmentation of sympathetic effect on GI motility
    b. Release of insulin
    c. Lipogenesis
    d. Increasing the numbers of Beta adrenergic receptors
    e. Increasing diastolic arterial blood pressure
5. Release of oxytocin by the posterior pituitary gland is controlled by:
    a. Oxytocin releasing hormone
    b. Neural signals from hypothalamus
    c. Neural signals from the thalamus
    d. Changes in body temperature
    e. Changes in arterial blood pressure
6. The following can be observed in a patient who has Grave's disease (hyperthyroidism):
    a. Drop of the upper eyelid
    b. High level of TSH
    c. Intolerance to cold
    d. High systolic blood pressure
    e. Constipation

7. The thyrotropin releasing hormone, stimulates the secretion of:
    a. Growth hormone
    b. Prolactin
    c. Adrenocorticotrophic hormone
    d. Melanocyte stimulating hormone
    e. Luteinizing hormone
8. The most sensitive regulatory mechanism of ADH secretion is dependent on:
    a. The volume receptors
    b. Renin-angiotensin system
    c. Hypothalamic osmoreceptors
    d. Renal glomerulotubular feedback
    e. Renal principal cells
9. Clinical uses of Oxytocin include:
    a. Stimulation of milk ejection in breastfeeding women
    b. Stimulation of ejaculation in infertile men
    c. Stimulation of uterine contraction in pregnant women
    d. Induction of breast development in adolescent girls
    e. Induction of vasoconstriction in hypotension
10. All the following is true about control of secretion if TSH except:
    a. It is inhibited by T4
    b. It is increased in cold weather
    c. It is increased in Grave's disease
    d. It is increased in TRH
    e. Has no marked diurnal rhythm
11. The actions of ACTH include the following except:
    a. Stimulation of melanocytes
    b. Increased secretion of aldosterone
    c. Induction of growth of the adrenal gland
    d. Induction of secretion of adrenomedullins
    e. Feedback inhibition of CRH
12. A most effective method of treating type I diabetes mellitus is:
    a. The patient should not eat any carbohydrates
    b. Exercise
    c. Reduce weight
    d. Drugs to stimulate the B cells of the pancreas
    e. Daily injections of insulin
13. The following factors have a direct marked effect on the adrenal cortex to stimulate the secretion of aldosterone except:
    a. Angiotensin III a)
    b. Angiotensin II
    c. Hyperkalemia
    d. Hypernatremia
    e. High levels of ACTH

14. A major regulator of bone growth is:
    a. Parathyroid hormone
    b. Calcitonin
    c. Growth hormone
    d. Prolactin
    e. Active vitamin D
15. If a patient dies of hypercalcemia, the most likely cause would be:
    a. Excessive bleeding due to failure of clotting
    b. Paralysis of skeletal muscles due to failure of interaction between actin and myosin
    c. Uncontrolled contraction of skeletal muscles due to hyperexcitability of nerves and muscles
    d. Failure of the SA node to generate impulses
    e. Hypo-osmolality
16. Primary hyperaldosteronism leads to:
    a. Moderate hyperglycemia
    b. Loss of Sodium in urine
    c. hyperkalemia
    d. Alkalosis
    e. Increased rennin secretion
17. Excess cortisol in Cushing's syndrome is associated with:
    a. Hypotension
    b. Protein depletionb)
    c. Hypoglycemia
    d. Dry thick skin
    e. Increased body hair
18. The following are actions of insulin, except:
    a. Inhibition of protein degradation
    b. Inhibition of gluconeogenesis
    c. Inhibition of ketogenesis
    d. Reduction of extracellular K+
    e. Increased renal tubular absorption of glucose
19. Ionized calcium:
    a. Forms 60% of total blood calcium
    b. Cannot be filtered by the kidneys
    c. Low levels stimulate calcitonin secretion
    d. Levels in blood are increased by increase in H + concentration
    e. Concentration inside the cell is the same as the interstitial fluid

20. Insulin can be described as:
    a. Gluconeogenic
    b. Ketogenic
    c. Protein anabolic
    d. Diuretic
    e. Vasoconstrictive
21. T3 is different from T4 in that:
    a. It binds to receptors located on cell membranes
    b. Its concentration increases in starvation
    c. Its volume of distribution is high
    d. It increases the efficiency of energy utilization
22. Which of the following hormones is not secreted by the adenohypophysis?
    a. ADH
    b. ACTH
    c. TSH
    d. FSH
23. All of the following are stimuli for growth hormone release except :
    a. Hypoglycemia
    b. Stress
    c. Obesity
    d. Exercise
24. C-cells are present in :
    a. Thyroid gland
    b. Adrenal cortex
    c. Parathyroid gland
    d. Pituitary gland
25. Which of the following is not an action of thyroid hormone :
    a. Raises BMR
    b. Increases cardiac output
    c. Decreases cholesterol
    d. Loss of libido
26. A patient with hypothyroidism is likely to have :
    a. Diarrhoea
    b. Weight gain
    c. Exophthalmos
    d. Wet skin
27. Renal calculi is seen in :
    a. Hyperthyroidism
    b. Hyperparathyroidism
    c. Cushing's disease
    d. Addison's disease

28. Vitamin D is created from _____ by skin cells.

    a. Dehydrocholesterol
    b. Cholesterol
    c. Hydrocholesterol
    d. Hydrodermis

29. Sebaceous glands secrete _____.

    a. Sebum
    b. Impetigo
    c. Serous
    d. Sirius

30. Which of the following statement regarding the epidermis is not true

    a. Composed of stratified squamous epithelium
    b. The deepest layer is the basal layer
    c. As skin cells die they become filled with a hard protein called keratin
    d. Melanocytes give skin its pink color

Section B. Short structured answer. Answer all the questions (20 marks)

31. Outline hormones produced by the anterior pituitary gland and state their functions (5 Marks)
32. Outline the functions of the skin (5 Marks)
33. Outline five functions of Thyroid hormones (5 Marks)
34. Describe the Renin Angiotensin Aldosterone system (RAAS) (5 Marks)

Section C. Long structured answer. Answer all the questions (20 Marks)

35.Discuss the hormones produced by the adrenal gland and list 2 pathologies associated with the hormones (10 marks)

36. Describe the physiology of calcium regulation by the body (10 Marks).