



SCHOOL OF HEALTH AND NATURAL SCIENCES

EXAMINATION FOR THE DIPLOMA IN NURSING YEAR 1

SUMMATIVE EXAMINATION (SEMESTER 2)

ACADEMIC SESSION 2010; SEMESTER 2

SND 1206: ANATOMY AND PHYSIOLOGY 2

APRIL 2010

TIME: 2 Hour

---

#### INSTRUCTIONS TO CANDIDATES

This question booklet contains two sections.

##### Section A

Sixty multiple choice questions (MCQ)

Answer ALL questions in Section A using the multiple choice answer sheet provided.

##### Section B

Four Short Answer Questions (SEQ)

Answer ALL questions in Section B using the answer booklets provided.

At the end of the examination, all the answer booklets, multiple choice answer sheets and the examination booklet must be fastened together to be placed in the box provided.

[This paper contains SIXTY MCQ and  
FOUR SAQ questions printed on TEN pages

Section A: 60 Mark

Answer all multiple choice questions

1. The primary male reproductive organ is the
  - A. Scrotum
  - B. Testes
  - C. Epididymis
  - D. Spermatic cord
  
2. The tubular structure that begins in the scrotum and ends at the ejaculatory duct is the
  - A. Epididymis
  - B. Spermatic cord
  - C. Ductus deferens
  - D. Efferent ducts
  
3. The white fibrous connective tissue capsule around the testes is called the
  - A. Tunica media
  - B. Tunica vasculosa
  - C. Tunica vaginalis
  - D. Tunica albuginea
  
4. Seminiferous tubules
  - A. Secrete testosterone
  - B. Connect the epididymis to the rete testis
  - C. Produce sperm through spermatogenesis
  - D. Carry sperm from the testes to the urethra
  
5. Interstitial cells
  - A. Surround and nourish the cells that produce sperm
  - B. Produce and secrete testosterone
  - C. Surround the testes within the scrotum
  - D. Are the cells that secrete fructose in the seminal vesicles
  
6. The source of an alkaline secretion that contains fructose and is secreted into the ejaculatory ducts is the
  - A. Bulbourethral glands
  - B. Seminal vesicles
  - C. Prostate gland
  - D. Ductus deferens

7. The source of an alkaline secretion that contains nutrients and is secreted into the ejaculatory ducts is the
- A. Bulbourethral glands
  - B. Seminal vesicles
  - C. Prostate gland
  - D. Ductus deferens
8. The source of an alkaline fluid that is secreted directly into the urethra is the
- A. Seminal vesicles
  - B. Prostate gland
  - C. Ductus deferens
  - D. Ejaculatory gland
9. Puberty begins with the secretion of
- A. Gonadotropin-releasing hormone
  - B. Follicle-stimulating hormone
  - C. Interstitial cell-stimulating hormone
  - D. Testosterone
10. When a follicle ruptures at ovulation, the portion that remains in the ovary becomes a
- A. Primordial follicle
  - B. Secondary follicle
  - C. Vesicular follicle
  - D. Corpus luteum
11. The narrow region of the uterus that is directed into the vagina is the
- A. Fundus
  - B. Body
  - C. Cervix
  - D. Internal os
12. The smooth muscle layer of the uterine wall is the
- A. Perimetrium
  - B. Epimetrium
  - C. Endometrium
  - D. Myometrium
13. The portion of the uterine wall that is sloughed off during menstruation is the stratum
- A. Functionale of the endometrium
  - B. Functionale of the perimetrium
  - C. Basale of the endometrium
  - D. Basale of the perimetrium

14. All of the following are functions of the vagina **EXCEPT**
- A. Passageway for menstrual flow
  - B. Receives the erect penis during intercourse
  - C. Site for fertilization of the female gamete
  - D. Serves as birth canal during birth of a baby
15. In females, erectile tissue that contains nerve endings in the external genitalia and is associated with feelings of sexual pleasure is the
- A. Mons pubis
  - B. Greater vestibular gland
  - C. Clitoris
  - D. Prepuce
16. The hormone that triggers ovulation is
- A. Follicle-stimulating hormone
  - B. Estrogen
  - C. Luteinizing hormone
  - D. Progesterone
17. The first menstrual flow is called
- A. Menarche
  - B. Puberty
  - C. Menopause
  - D. Prima menstruation
18. All of the following occur during the follicular phase of the ovarian cycle **EXCEPT**
- A. FSH stimulates follicle development and estrogen levels are increasing
  - B. Progesterone levels are increasing
  - C. Menstruation occurs
  - D. The uterine lining begins repair
19. The event that terminates the follicular phase of the ovarian cycle is
- A. Menstruation
  - B. Repair of the uterine lining
  - C. Ovulation
  - D. Fertilization
20. All of the following are true about the female reproductive cycles **EXCEPT**
- A. FSH stimulates maturation of an ovarian follicle and ovulation usually occurs on day 14 of a 28 day cycle
  - B. Low levels of estrogen and progesterone cause menstruation to begin on day 1 of the cycles
  - C. Estrogen from the ovarian follicle stimulates proliferation of the uterine lining
  - D. Progesterone stimulates the degeneration of a corpus luteum into a corpus albicans

21. The ducts in the breast that carry milk from the glandular tissue to the nipple are the
- A. Suspensory ducts
  - B. Lactiferous ducts
  - C. Mammary ducts
  - D. Lactiferous sinuses
22. In the female, the hormone that is primarily responsible for the development of the secondary sex characteristics is
- A. Estrogen
  - B. Progesterone
  - C. Follicle-stimulating hormone
  - D. Luteinizing hormone
23. The principal androgen is
- A. Secreted in response to follicle-stimulating hormone
  - B. Progesterone
  - C. Chorionic gonadotropin
  - D. Testosterone
24. Which of the following represents a correct grouping about hormones from the pancreas?
- A. Insulin, alpha cells, increases blood glucose levels
  - B. Insulin, beta cells, increases blood glucose levels
  - C. Insulin, beta cells, decreases blood glucose levels
  - D. Glucagon, alpha cells, decreases blood glucose levels
25. Hormones from this gland cause a person to have temporary high blood pressure, rapid heart beat, dilated pupils, momentary muscular power, and be generally alert in response to stress. What is the name of this gland?
- A. Adrenal cortex
  - B. Thyroid gland
  - C. Adenohypophysis
  - D. Adrenal medulla
26. Hyposecretion of hormones from the adrenal cortex is likely to cause
- A. High blood sodium, dehydration, and low blood glucose
  - B. Low blood sodium, fluid retention, and high blood glucose
  - C. Low blood sodium, dehydration, and low blood glucose
  - D. High blood sodium, fluid retention, and high blood glucose

27. The hormone from the adrenal cortex that increases blood glucose levels and helps to counteract the inflammatory response is
- A. Aldosterone
  - B. Cortisol
  - C. Epinephrine
  - D. Norepinephrine
28. The primary action of mineralocorticoids is to \_\_\_\_\_ the body.
- A. Conserve sodium ions in
  - B. Eliminate sodium ions from
  - C. Conserve potassium ions in
  - D. Eliminate water from
29. The principal mineralocorticoid from the adrenal cortex is
- A. Aldosterone
  - B. Cortisol
  - C. Androgen
  - D. Estrogen
30. The release of ACTH from the adenohypophysis stimulates the release of
- A. Aldosterone from the adrenal medulla
  - B. Cortisol from the adrenal cortex
  - C. Epinephrine from the adrenal medulla
  - D. Rennin from the kidneys
31. Concerning the actions of calcitonin and parathyroid hormone,
- A. Both calcitonin and parathyroid hormone increase blood calcium levels
  - B. Both calcitonin and parathyroid hormone decrease blood calcium levels
  - C. Calcitonin increases and parathyroid hormone decreases blood calcium levels
  - D. Calcitonin decreases and parathyroid hormone increases blood calcium levels
32. The hormone that is produced by the parafollicular cells of the thyroid gland is
- A. Calcitonin
  - B. Triiodothyronine
  - C. Thyroid-stimulating hormone
  - D. Thyroxine
33. A chemical element that is essential for the production of active thyroid hormone is
- A. Calcium
  - B. Potassium
  - C. Iodine
  - D. Sodium

34. The secretion of thyroxine from the thyroid gland is regulated by a hormone from the
- A. Adenohypophysis
  - B. Neurohypophysis
  - C. Adrenal gland
  - D. Thymus gland
35. An increased amount of antidiuretic hormone leads to
- A. An increased amount of urine
  - B. A decreased amount of urine
  - C. No change in the amount of urine
  - D. An increased amount of aldosterone
36. The hormone from the neurohypophysis that stimulates uterine contractions is
- A. Follicle-stimulating hormone
  - B. Vasopressin
  - C. Antidiuretic hormone
  - D. Oxytocin
37. A mother that is unable to produce milk in her mammary glands may have a deficiency of \_\_\_\_\_ hormone.
- A. Growth
  - B. Adrenocorticotropic
  - C. Prolactin
  - D. Luteinizing
38. Two hormones from the anterior pituitary gland that directly affect the ovaries and testes are
- A. Prolactin and luteinizing hormone
  - B. Growth hormone and prolactin
  - C. Follicle-stimulating hormone and luteinizing hormone
  - D. Growth hormone and follicle-stimulating hormone
39. Hormone secretion by the anterior pituitary gland is regulated by releasing and inhibiting factors that are produced in the
- A. Hypothalamus
  - B. Thalamus
  - C. Neurohypophysis
  - D. Midbrain
40. The endocrine gland that is attached to the inferior surface of the brain is the \_\_\_\_\_ gland.
- A. Thyroid
  - B. Pineal
  - C. Adrenal
  - D. Pituitary

41. A hormone that causes secretion of another hormone is called a \_\_\_\_\_ hormone.
- A. Tropic
  - B. Negative feedback
  - C. Neural
  - D. Positive
42. Cells that have receptor sites for a given hormone
- A. Are affected by all hormones
  - B. Are collectively called the target tissue for the hormone
  - C. React with the hormone to change the configuration of DNA
  - D. Are called tropic cells
43. A word that means "pertaining to taste" is
- A. Olfactory \*
  - B. Gustatory
  - C. Auditory \*
  - D. Oculatory
44. The cranial nerve that transmits impulses for equilibrium is cranial nerve
- A. VI
  - B. VII
  - C. VIII
  - D. IX
45. Auditory impulses are transmitted along cranial nerve
- A. VII and interpreted in the temporal lobe
  - B. VIII and interpreted in the parietal lobe
  - C. VII and interpreted in the parietal lobe
  - D. VIII and interpreted in the temporal lobe
46. The specific organ that contains the hair cell receptors for hearing is the
- A. Vestibular membrane
  - B. Organ of Corti
  - C. Tectorial membrane
  - D. Organ of ampullaris
47. The receptors for hearing are located in the
- A. Utricle
  - B. Saccule
  - C. Vestibule
  - D. Cochlea



48. The function of the auditory ossicles is to
- A. Support the tympanic membrane and oval window
  - B. Dampen or reduce the amplitude of sound waves so the inner ear is not damaged
  - C. Transmit the sound waves from the external ear to the inner ear
  - D. Prevent the leakage of fluids from the inner ear
49. The three regions of the inner ear are the
- A. Utricle, saccule, and semicircular canals
  - B. Vestibule, semicircular canals, and cochlea
  - C. Utricle, saccule, and cochlea
  - D. Vestibule, saccule, and cochlea
50. The passageway between the throat and the middle ear is the
- A. Middle auditory meatus
  - B. Scala tympani
  - C. Auditory or Eustachian tube
  - D. External auditory meatus
51. The region of the retina that provides the sharpest or most acute vision is the
- A. Lateral margin of the retina
  - B. Optic disk
  - C. Medial margin of the retina
  - D. Fovea centralis
52. Having to adjust to a dark room after walking in from a bright area is explained by the fact that
- A. Rhodopsin does not function in dim light
  - B. The breakdown of rhodopsin occurs slowly
  - C. Time is needed to regenerate rhodopsin
  - D. Time is needed for the pupil to dilate to let light enter the eye
53. The photoreceptors for color vision are the
- A. Rods only
  - B. Cones only
  - C. Both rods and cones
  - D. Neither rods nor cones
54. In the eye, the first structure that refracts light in the visual pathway is the
- A. Lens
  - B. Aqueous humor
  - C. Pupil
  - D. Cornea

55. Compared to the inside of the membrane, the outside of the neuron cell membrane has a
- A. Higher concentration of sodium and is more positively charged
  - B. Higher concentration of potassium and is more positively charged
  - C. Higher concentration of sodium and is more negatively charged
  - D. Higher concentration of potassium and is more negatively charged
56. The cerebral hemisphere lobe that is directly posterior to the central sulcus is the
- A. Frontal lobe
  - B. Parietal lobe
  - C. Occipital lobe
  - D. Temporal lobe
57. The region of the brainstem that contains vital reflex centers for heart rate, respiration, and blood pressure is the
- A. Midbrain
  - B. Medulla oblongata
  - C. Pons
  - D. Hypothalamus
58. Three cranial nerves that function in eye movements are the
- A. Optic, oculomotor, and ophthalmic
  - B. Oculomotor, trochlear, and abducens
  - C. Optic, trigeminal, and oculomotor
  - D. Optic, facial, and trigeminal
59. The spinal nerve plexus that supplies innervation to the arm is the \_\_\_\_\_ plexus.
- A. Cervical
  - B. Brachial
  - C. Lumbar
  - D. Sacral
60. The parasympathetic nervous system
- A. Causes constriction of cutaneous blood vessels and dilation of vessels to the skeletal muscles
  - B. Decreases heart rate and increases secretion of digestive enzymes
  - C. Releases epinephrine from the postganglionic fibers
  - D. Stimulates the sweat glands in stressful situations

Section B: 20 Mark  
Answer all part

1. Briefly describe the physiology of sense of olfaction (6 Mark)
2. State the flow of Cerebral Spinal Fluid in the central nervous system (3 Mark)
3. Explain the conduction across the synapse (7 Mark)
4. State THREE functions of ovary (4 Mark)