TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Applied and Health Sciences

DEPARTMENT OF MEDICAL SCIENCES

DIPLOMA IN PHARMACEUTICAL TECHNOLOGY

(DPTM 12M)

AMD 2206: MEDICAL PHYSIOLOGY II

SUPPLEMENTARY/SPECIAL EXAMINATIONS

SERIES: FEBRUARY 2013

TIME: 2 HOURS

INSTRUCTIONS:

- This paper consists of TWO Sections. Answer ALL questions.
- Answer **ALL** questions in Section **A** and **B** and any **THREE** in question **C.**

This paper consists of Five printed pages.

SECTION A (40 MARKS) Answer All questions

1. Which of the following is not a secondary sex characteristic
   A. Growth of breast in female
   B. Deepening of voice in males
   C. Deposition of thigh fat in females
   D. Presence of perils in males

2. The accessory organs of the eye DO NOT include
   A. Eyelids
   B. Lacrimal apparatus
   C. Retina
   D. Eyebrows

3. Which of the following does not describe a stage in hearing process
   A. Sound waves in air
   B. Mechanical movement of ossicles
   C. Fluid wave of perily mph
   D. Movement of getatonous cypula

4. The lacrimal apparatus includes the following except
   A. Lacrimal glands
   B. Lacrimal bone
   C. Lacrimal sac
   D. Lacrimal canaliculi

5. The functions of tear mixture includes the following except
   A. Nourishment of cornea
   B. Bactericidal effect
   C. Washing away irritants
   D. Drying the conjunctiva

6. The following are true with regards to taste except:
   A. Sweet taste at the tongue tip
   B. Sour taste at the tongue tip
   C. Sour taste on the sicles
   D. Bitter taste at the back

7. Which one of the following is no utilized in balance directly
   A. Vestibule
   B. Ampullae
   C. Utricle
   D. Saccule
8. The female external genitalia does not include:
   A. Labia majora
   B. Clitoris
   C. Uterus
   D. Vaginal opening

9. The hormones produced in the ovary include:

A. Oestrogen and progesterone
B. Oestrogen and uternising hormone
C. Progesterone and testosterone
D. Oestrogen and testosterone

10. During climaectiric (menopause) the following occur except:
    A. Deposition of hip fat
    B. Shrinkage of breasts
    C. Atrophy of sex organs
    D. Thinning of the skin

11. The seminal fluid contains
    A. Spermatozoa
    B. Nutrients for spermatozoa
    C. Buffer for ejaculate
    D. Pure water

12. The fluid from the prostate gland
    A. Helps protect semen in acidic vaginal environment
    B. Provides nutrients for sperms
    C. Contains the sperms
    D. Is a colourant for ejaculate

13. Which is the first sign of puberty in males:
    A. Development of mammary glands
    B. Enlargement of testes
    C. Deposition of thigh fat
    D. Baldness

14. The subdvisions of circulatory system are the____which carries blood to and from lungs and the _____ which carries blood to and from all other parts of the body:
    A. Venous; arterial circuit
    B. Pulmonary: Systematic circuit
    C. Systematic pulmonary circuit
    D. Arterial; venous circuit

15. What could happen if the pappilary muscles failed to contraet?
    A. The ventricles would pump blood
    B. Blood would not enter the atria
    C. The semilunar valves would not open
    D. The AV values would not close properly

16. The pacemaker of the heart is
    A. In the Atrioventricular node
    B. Is slowed by the vagus nerve
    C. Increases its rate of firing with an increase in body temperature
    D. Both B and C

17. Deepening of voite in males after puberty is caused by

A. Pretence to be adults
B. Hairy chest
C. Larger chest size
D. Enlargement larynx due to testrorenone

18. What is the role of inhibin hormone in males
A. Reduce testosterone production
B. Reduce sperm production in puberty
C. Increase maturity of the brain
D. Increase boldness in males

19. What is meiosis?
A. Same as mitosis
B. Reduction division of the cell
C. Accomplicated process
D. Division of body (somatic cells)

20. A typical ejaculate is about
A. 2 – 5 ml
B. 20 – 50 ml
C. 20 – 50 ml
D. 2 – 5 dl

21. With regards to spermatogenesis which one contains a diploid number
A. Spermatozoa
B. Spermatids
C. Secondary spermatocytes
D. Primary spematocyte

22. Milk expression from the mammary glands is under the influence of:
A. Oxytocin
B. Progesterone
C. Oestrogen
D. Relaxin

23. Actual gas exchange in the respiratory system occurs in the
A. Bronchii
B. Alveoli
C. Bronchiles
D. Trachea

24. Deficiency in production of insulin results in a condition referred to as
A. Anaemia
B. Diabetes
C. Goat
D. Goitre

25. Thyroids hormones do not:

A. Cause water resporation in kidneys
B. Increase basa metabolic rate
C. Regulates metabolism of carbohydrates
D. Cause synthesis of some proteins

26. Prolactin causes
A. Contraction of the uterus
B. Stimulation of lactation
C. Reduced milk production
D. Release of growth hormone

27. GnRH causes the release of
A. Oestrogen and progesterone
B. Gametes
C. Growth hormone
D. FSH and LH

28. What is the role of the interstitial cell secreting hormone
A. Secondary cell characteristics
B. Improve testosterone production
C. Uptake of glucose
D. Metabolism of glucose

29. The hypothalamus does not produce
A. Caricotrophin release hormone
B. Prolactin release hormone
C. Thyroid hormone
D. Growth hormone

30. Prostaglandins are lipid substances that act as local hormones to cause the following except:
A. Glucose metabolism
B. Potentiating pain
C. Regulating blood pressure
D. Utenne contractions during labour

31. Which of the following is true
A. X cells secrete glucagon
B. β cells secrete glycagon
C. δ cells secrete glycagon
D. α cells secrete insulin

32. Normal calicium levels must be maintained so that there's proper
A. Sex hormone production
B. Muscle contraction
C. Production of calcitonin
D. Glucose metabolism

33. Which one of the following is not an effect of calcitonin

A. Increased osteoclast activity
B. Increased intestinal absorption
C. Increased amount of Ca^{2+} in bone
D. Reduced reasporption by renal tubules

34. In what form is carbondioxide transported by blood from tissues to the lungs:
A. As dissolved Co_2 gas in plasma
B. Attached to haemoglobin as carbamahaemoglobin
C. As carbonic acid and bicarbonate ions in red blood cells
D. All the above answers are correct

35. The levels of progesterone and relaxin start falling first before term while that of oxytocin readily rises and peaks at onset of labour, when those of the former are lowest. This emplies that:
A. Progestorone and oxytocin induce labour
B. Relaxin and oxytocin induce labona
C. Oxytocin induces labour
D. Relaxin and oxytocin maintain labour

36. The sinus rhythm fines spontaneously at the rate of
A. 40 – 50 bpm
B. 20 – 40 bpm
C. 70 – 80 bpm
D. 10 – 20 bpm

37. The following substances is secreated by the stomach D-cells once nit of mucosa falls below 3:
A. Bradykinin
B. Enterochromaffin like cells
C. Somatostatin
D. Somatomatin

38. Ductular cells are as pronsible for production as
A. Amylase
B. Lipase
C. Sodium hydrogen carbonate
D. Calcium carbonate

39. The following are important for blood glucose control except
A. Growth hormone
B. Glycogen
C. Insulin
D. Glycagon

40. The cardiac muscle is made up of the following layers except
A. Myometrium
B. Myocardium
C. Endo cardium
D. Epi cardium

SECTION B (40 MARKS)

1. Describe the physiology of taste. **(4 marks)**
2. Outline the functions of parathyroid and calcitonin. **(4 marks)**
3. Explain the **TWO** processes through which cell nutrition occurs. **(4 marks)**
4. Describe the flow of blood through the heart.
5. Briefly describe the cardiac cycle.
6. Describe the functions of accessory organs of the eyes. **(4 marks)**
7. List the functions of tears and other oily substances from tarsal glands. **(4 marks)**
8. Why is the effect of oxytocin taken as a positive feedback during childbirth. **(4 marks)**
9. Give any **FOUR** pathological and/or pharmacological effects of glycocorticoids. **(4 marks)**
10. Outline the influence of the hypothalamus on the lobes of the pituitary **(4 marks)**

SECTION C

1. With brief description illustrate the movement of spermatozoa and changes that occur to its environment in the carrier fluid from testes upto deposition into vagina. **(20 marks)**

2. Describe the menstrual cycle describing the hormones their functions and changes that occur in the body. **(20 marks)**

3. a) Describe the physiology of hearing. **(10 marks)**
   b) Describe the functions of the female reproductive organs. **(10 marks)**

4. a) With illustration describe the heart conducting system. **(10 marks)**
   b) Explain any **FIVE** factors that could the heart rate. **(10 marks)**

5. a) Outline the roles of the anterior pituitary hormones. **(10 marks)**
   b) How does Adrenaline potentiate the fight/flight response. **(10 marks)**