



**AMREF INTERNATIONAL UNIVERSITY  
SCHOOL OF MEDICAL SCIENCES  
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES  
End of Semester April 2025 Examinations**

**COURSE CODE AND TITLE: BSM 122: Medical Physiology II**

**DATE: 11-APRIL-2025**

Duration: 2 HOURS

Start: 9:00 AM

Finish: 11:00 AM

**INSTRUCTIONS**

1. This exam is out of 70 marks
2. This Examination comprises THREE Sections. Section I: Multiple Choice Questions (20 marks) Section II: Short Answer Questions (30 marks) and Section III: Long Answer Questions (20 marks)
3. Answer ALL Questions.
4. Do Not write anything on the question paper -use the back of your booklet for rough work if need be.

## **SECTION I: MULTIPLE CHOICE QUESTIONS (20 MARKS)**

1. Gastric acid secretion is decreased by:
  - A. Vagal inhibition
  - B. Luminal peptides & amino acids
  - C. Noradrenaline
  - D. Distension of bowel wall
2. The hormone measured to diagnose pregnancy is
  - A. Progesterone
  - B. Human chorionic gonadotropin
  - C. Estrogen
  - D. Oxytocin
3. The tissue involved in the regulation of glomerular filtration rate (GFR) is;-
  - A. Juxtaglomerular apparatus
  - B. Afferent arteriolar tone
  - C. Efferent arteriolar tone
  - D. Loop of Henre
4. The correct process of ovum development progresses is;-
  - A. Primary oocyte – primary germ cell – oogonium – secondary oocyte – ovulation – ovum
  - B. Primary germ cell – oogonium – primary oocyte – secondary oocyte – ovulation – ovum
  - C. Oogonium – primary germ cell – secondary oocyte – ovulation – primary oocyte – ovum
  - D. Ovulation – primary oocyte – primary germ cell – oogonium – secondary oocyte – ovum
5. In the small intestine, glucose is absorbed;-
  - A. Passively
  - B. In combination with Sodium
  - C. By facilitated diffusion
  - D. By cotransport with Chloride

6. Renal nerve sympathetic stimulation
  - A. Causes increased sodium reabsorption
  - B. Inhibits renin release
  - C. Increased GFR
  - D. Decrease sodium reabsorption
7. Cells that secrete chemicals into the extracellular fluid that act on cells in the same tissue are;-
  - A. Neural
  - B. Endocrine
  - C. Paracrine
  - D. Autocrine
8. The best describes the process by which glucose can be formed from amino acids?
  - A. Gluconeogenesis
  - B. Glycogenesis
  - C. Glycogenolysis
  - D. Glycolysis
9. A 55-year patient undergoes gastrectomy. The surgeon informs him that he needs Vitamin B12 injections for the rest of his life. This is because of absence of:
  - A. Goblet cells
  - B. Chief cells
  - C. Parietal cells
  - D. G cell
10. Concerning the intestinal secretion, the following is true except:
  - A. The fluid is alkaline
  - B. The fluid contains hydrochloric acid
  - C. The fluid contains mucus
  - D. The fluid contains water
11. Gastric acid secretions is increased by:
  - A. Parasympathetic stimulation
  - B. Parasympathetic inhibition
  - C. Sympathetic stimulation
  - D. Cholinergic antagonists
12. An increase in the glomerular filtration rate (GFR) is caused by;-
  - A. Constriction of the afferent arteriole
  - B. Constriction of the efferent arteriole
  - C. Increased plasma protein concentration
  - D. Constriction of the ureter
13. The role of intrinsic factor is;-
  - A. Digestion of proteins
  - B. Absorption of vitamin B12

- C. Neutralization of stomach acid
  - D. Activation of pepsinogen
14. The statement that best describes the role of oxytocin is;-
- A. Increase in libido
  - B. A feeling good hormone
  - C. Milk let down
  - D. Improve prolactin levels
15. Water filtration by the kidney is estimated at :
- A. Is 180 l/hr
  - B. Is 125 ml/min
  - C. Up to 90% is reabsorbed
  - D. Glucose is common
16. \_\_\_\_\_ occurs in the glomerulus while \_\_\_\_\_ occurs in the peritubular capillaries.
- A. Filtration/Secretion
  - B. Secretion/Reabsorption
  - C. Reabsorption/Secretion
  - D. Filtration/Reabsorption
17. The hypothalamic hormone that contributes to the regulation of the male reproductive system is;-
- A. Luteinizing hormone
  - B. Gonadotropin-releasing hormone
  - C. Follicle-stimulating hormone
  - D. Androgens
18. With regard to endocrine control;-
- A. The endocrine system provides a rapid, precise but short term control of cellular function
  - B. Paracrine cells release their hormones into the bloodstream so that they reach all parts of the body
  - C. Autocrine cells release hormones that control their own function
  - D. Hormones are secreted from either classical glandular tissues or whole organs and not from other tissues
19. The trigger of posterior pituitary to secrete antidiuretic hormones is;-
- A. Decrease of  $K^+$  ions
  - B. Low sodium level
  - C. Over production of proteins
  - D. Dehydration
20. The major site for digestion and absorption of nutrients is:
- A. Stomach
  - B. Large intestine
  - C. Small intestine

D. Esophagus

**SECTION II: SHORT ANSWER QUESTIONS (40 MARKS)**

1. Describe process of motility of food from the buccal cavity to the gastric (8 marks)
2. Explain three (3) phases of gastric secretion (6 marks)
3. Explain the digestion of three(3) major forms of carbohydrates (6 marks)
4. Describe Renin Angiotensin Aldosterone system (RAAS) in regulation of intravascular fluid volume and electrolytes (8marks)
5. State two (2) function of luteinizing hormone (2 marks)

**SECTION III: LONG ANSWER QUESTIONS (20 MARKS)**

1. Reproduction entails formation of gametes and a healthy menstrual cycle.
  - a) Describe the process of spermatogenesis (5 marks)
  - b) Describe the Menstrual cycle (15 marks)