



**AMREF INTERNATIONAL UNIVERSITY  
SCHOOL OF MEDICAL SCIENCES  
DEPARTMENT OF NURSING & MIDWIFERY SCIENCES  
END OF SEMESTER APRIL 2026 EXAMINATIONS**

**COURSE CODE AND TITLE: BSM 123 Medical physiology 11 -preservice**

**DATE: 7TH APRIL 2026      PAPER 1**

**TIME: 2 HOURS      Start: 9AM      Finish: 11AM**

**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 A: MULTIPLE CHOICE QUESTIONS 1 MARK EACH (10 MARKS)**

1. One of the following inhibits Gastric acid secretion:
  - A. Vagal inhibition
  - B. Luminal peptides & amino acids
  - C. Noradrenaline
  - D. Distension of bowel wall
2. One of the following is involved in the regulation of glomerular filtration rate (GFR)?
  - A. Juxtaglomerular apparatus
  - B. Afferent arteriolar tone
  - C. Efferent arteriolar tone
  - D. All of the above.
3. The true 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
4. In the small intestine, glucose is absorbed
  - A. Passively
  - B. In combination with Sodium
  - C. By facilitated diffusion
  - D. By cotransport with Chloride
5. One of the following is the process by which glucose can be formed from amino acids:
  - A. Gluconeogenesis
  - B. Glycogenesis
  - C. Glycogenolysis
  - D. Glycolysis
6. 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 which type of cells:
  - A. Goblet cells
  - B. Chief cells
  - C. Parietal cells
  - D. G cell
7. Gastric acid secretions is increased by:
  - A. Parasympathetic stimulation
  - B. Parasympathetic inhibition
  - C. Sympathetic stimulation
  - D. Cholinergic antagonists
8. One of the following would cause an increase in the glomerular filtration rate (GFR):
  - A. Constriction of the afferent arteriole
  - B. Constriction of the efferent arteriole
  - C. Increased plasma protein concentration

D. Constriction of the ureter

9. The estimated amount of Water filtrated by the kidney is;

- A. 180 l/hr
- B. 125 ml/min
- C. Up to 90% is reabsorbed
- D. Glucose is common

10. One of the following causes for the posterior pituitary to secrete antidiuretic hormone:

- A. decrease of K<sup>+</sup> ions
- B. low sodium level
- C. over production of proteins
- D. dehydration

### **SECTION B: SHORT ANSWER QUESTIONS (30 MARKS)**

1. Outline any two-body fluid compartments (2 marks)
2. Explain 3 phases of gastric secretion (6 marks)
3. Explain any three factors that influence molecular filtration through the glomerulus (6 marks)
4. Describe Renin Angiotensin Aldosterone system (RAAS) in regulation of intravascular fluid volume and electrolytes (8marks)
5. Describe the motility of food from the buccal cavity to the gastric (8 marks)

### **SECTION C: LONG ANSWER QUESTIONS (30 MARKS)**

1. Reproduction entails formation of gametes and a healthy menstrual cycle.
  - a) Outline any three functions of high estrogen levels during the menstrual cycle (3 marks)
  - b) Describe the Menstrual cycle and include the hormones (15 marks)
2. Kidney plays critical role in fluid, electrolyte balance and acid base regulation in the body. Describe the four renal processes in urine formation and elimination. (12 marks)