

**First Professional BUMS Degree Regular/Supplementary  
Examinations March 2025  
Munafeul Aza – Paper II  
(2022 Scheme)**

**Time: 3 hrs****Max Marks: 100**

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

**1. Multiple Choice Questions****(20x1=20)**

**The Answers to MCQ questions (Q.No. i to Q.No. xx) shall be written continuously on the first two writing sheets (ie Page No. 3 & 4) only**

- i. The counter-current multiplier system, which concentrates urine, primarily involves which part of the nephron
  - a) Proximal convoluted tubule
  - b) Loop of Henle
  - c) Distal convoluted tubule
  - d) Collecting duct
- ii. In which part of the kidney is the highest concentration of urea typically found
  - a) Cortex
  - b) Medulla
  - c) Renal pelvis
  - d) Renal capsule
- iii. What triggers the juxtaglomerular cells to release renin
  - a) High sodium concentration in the distal tubule
  - b) High blood pressure
  - c) Low sodium concentration in the distal tubule
  - d) Increased blood volume
- iv. Where is the micturition center located in the central nervous system
  - a) Medulla oblongata
  - b) Cerebral cortex
  - c) Pons
  - d) Hypothalamus
- v. In hemodialysis, blood is filtered through a membrane known as the:
  - a) Dialysate
  - b) Peritoneum
  - c) Dialyzer
  - d) Glomerulus
- vi. Which layer of the skin provides most of its structural strength and elasticity
  - a) Epidermis
  - b) Hypodermis
  - c) Dermis
  - d) Stratum corneum
- vii. The secretion from apocrine sweat glands is primarily:
  - a) Watery and odorless
  - b) Rich in lipids and proteins
  - c) Composed of mostly electrolytes
  - d) Acidic in nature
- viii. During exercise, the body primarily loses heat through which process
  - a) Conduction
  - b) Convection
  - c) Evaporation
  - d) Radiation
- ix. Which type of cell in the skin is primarily responsible for immune defense
  - a) Keratinocytes
  - b) Melanocytes
  - c) Merkel cells
  - d) Langerhans cells
- x. Which of the following layers provides the primary waterproof barrier in the skin
  - a) Stratum spinosum
  - b) Stratum granulosum
  - c) Stratum basale
  - d) Stratum corneum
- xi. Which ion is responsible for depolarization of the action potential in nerve fibers
  - a) Calcium
  - b) Potassium
  - c) Chloride
  - d) Sodium

xii. Which neurotransmitter is most directly involved in the regulation of the mood, appetite, and sleep  
a) Acetylcholine      b) Glutamate      c) Serotonin      d) Norepinephrine

xiii. The spinal cord ends at approximately which vertebral level in adults  
a) L1-L2      b) T12-L1      c) L3-L4      d) S1-S2

xiv. The daily production of CSF in an adult is approximately:  
a) 100 mL      b) 250 mL      c) 500 mL      d) 1000 mL

xv. The perception of pain is primarily processed in which part of the brain  
a) Cerebellum      b) Thalamus      c) Occipital      d) Temporal lobe

xvi. Which cells in the pancreas secrete glucagon  
a) Alpha cells      b) Beta cells      c) Delta cells      d) F cells

xvii. The primary site of action of calcitonin is:  
a) Bone      b) Kidney      c) Intestine      d) Liver

xviii. Which of the following is a primary symptom of hypercalcemia  
a) Tetany      b) Hypotension      c) Muscle cramps      d) Constipation

xix. Which of the following hormones is secreted by anterior pituitary gland  
a) Vasopressin      b) Oxytocin      c) Growth hormone      d) Epinephrine

xx. Cortisol secretion typically peaks at which time of day  
a) Early morning      b) Afternoon      c) Evening      d) Midnight

**Short Answer Questions****(8x5=40)**

2. Describe the functional anatomy of liver
3. Explain the mechanism of breathing
4. Describe renal circulation
5. Explain the renal function tests
6. Explain the role of skin in regulation of body temperature
7. Describe synapse
8. Explain the functions of cerebellum
9. Describe the Unani concept of reproductive faculty

**Long Answer Questions****(4x10=40)**

10. Describe the digestion and absorption of carbohydrates
11. Explain gaseous exchange in lungs and tissues
12. Describe the synthesis and secretion of thyroid hormones
13. Describe and discuss puberty: onset, progression and stages.

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