

**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

(PTO)

- 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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