

Chapter – 16 | Introduction to Excretory System

QUIZ
PART-04

1. PCT is lined by:

- A. Stratified squamous epithelium
- B. Simple cuboidal brush border epithelium
- C. Ciliated columnar epithelium
- D. Transitional epithelium (B)

Explanation : PCT has simple cuboidal brush border epithelium to increase surface area for reabsorption.

2. Brush border in PCT increases the rate of absorption up to:

- A. 5 times
- B. 10 times
- C. 20 times
- D. 50 times (C)

Explanation : Brush border increases absorption rate up to about 20 times.

3. Nearly what percentage of electrolytes and water is reabsorbed in PCT?

- A. 10–20%
- B. 30–40%
- C. 70–80%
- D. 95–100% (C)

Explanation : PCT reabsorbs nearly all essential nutrients and 70–80% of electrolytes and water.

4. The descending limb of Henle's loop is permeable to:

- A. Water
- B. Proteins
- C. Glucose only
- D. Urea only (A)

Explanation : The descending limb is permeable to water but almost impermeable to electrolytes.

5. The ascending limb of Henle's loop is impermeable to:

- A. Sodium ions
- B. Water
- C. Chloride ions
- D. Electrolytes (B)

Explanation : The ascending limb does not allow water to pass but transports electrolytes.

6. Conditional reabsorption of Na^+ and water mainly occurs in:

- A. PCT
- B. DCT
- C. Bowman's capsule
- D. Glomerulus (B)

Explanation : DCT helps in conditional reabsorption of sodium and water.

7. Large amounts of water can be reabsorbed from:

- A. Collecting duct
- B. Glomerulus
- C. Afferent arteriole
- D. Renal artery (A)

Explanation : Collecting duct reabsorbs water and helps produce concentrated urine.

8. Counter-current mechanism mainly involves:

- A. Ureter and bladder
- B. Henle's loop and vasa recta
- C. Liver and kidney
- D. Cortex and capsule only (B)

Explanation : Henle's loop and vasa recta maintain the medullary osmotic gradient.

9. The osmolarity increases from cortex to inner medulla from about:

- A. 100 to 300 mOsmol/L
- B. 300 to 1200 mOsmol/L
- C. 1200 to 300 mOsmol/L
- D. 500 to 600 mOsmol/L (B)

Explanation : Osmolarity increases from about 300 mOsmol/L in cortex to 1200 mOsmol/L in inner medulla.

10. Human kidneys can produce urine nearly how many times more concentrated than initial filtrate?

- A. Two times
- B. Four times
- C. Six times
- D. Eight times (B)

Explanation : Human kidneys can produce urine about four times more concentrated than the initial filtrate.