UNIT-III: HUMAN PHYSIOLOGY

6. EXCRETORY PRODUCTS AND THEIR ELIMINATION

1 OMQ + 1LAQ = [1M + 8 M= 9 M]

ROOT POINTS

1. Excessive intake of food, fluids or the body metabolic activities lead to accumulation of ammonia (higly toxic), urea (less toxic) and ions like Na^+, K^+ Cl^-, phosphate, sulphate. Such excretory products are to be eliminated from our body regularly.
2. Main contents of this chapter are i) Human excretory system ii) Urine formation iii) Mechanism of concentration of filterate iv) Regulation of Kidney function v) Micturition vi) Role of other organs in excretion v) Disorders of Excretory system(Kidney stones - Renal calculi).
3. **Excretion** is the elimination of nitrogenous waste material like ammonia, urea, uric acid.
4. The most toxic form of nitrogenous waste is **ammonia.** [MCQ]
5. **Liver** converts ammonia into urea in mammals. [OWQ]
6. **Human excretory system** consists of (i) a pair of kidneys (ii) a pair of ureters (iii) urinary bladder (iv) urethra, and v) lungs, liver and skin. [LAQ]
7. Kidneys are **main excretory organs.**
8. Kidneys act as water **balancing organs**.
9. **Nephrons** are the functional units of the kidney. [OWQ]
10. The medulla of kidney is divided into conical masses called **Medullary pyramids.** [FIB]
11. **Aldosterone** hormone from the adrenal cortex facilitates the reabsorption of Na and water. [MCQ]
12. In the human kidney, the projections of the cortex that separate the renal pyramids are called **Columns of Bertin**. [MCQ]
13. The double walled cup like structure of the nephron is **Bowman's capsule.** [OWQ]
14. The specialized epithelial cells of Bowman's capsule are called **Podocytes.** [FIB]
15. The first step in the formation of urine is the 'filtration' of blood from glomerulus into the lumen of Bowman's capsule is called **Glomeular filtration**

16. The 'U' shaped blood vessel that runs parallel to the loop of Henle is **Vasa recta.** [FIB]

17. **Renin** is produced in **kidney** and **Rennin** is produced in **stomach**. [IPE]

18. **Lungs** remove large amounts of CO_2 and water as part of excretion. [MCQ]

19. Glycosuria and Ketonuria are the symptoms of the disorder **Diabetes mellitus**. [FIB]

20. The ultimate method for correcting acute renal failure (kidney failure) is **kidney transplantation.** [MCQ]

21. Removal of proximal convoluted tubule from the nephron will result in **more concentrated urine**. [NEET-2015]

22. Human urine is usually acidic because hydrogen ions are actively **secreted into the flitrate**. [NEET-2015]

23. The part of nephron involved in active reabsorption of sodium is **distal convoluted tubule**. [NEET-2015]

24. The ascending limb of loop of Henle is **impemeable to water**. [NEET-2017]

25. **Formation of concentrated urine** is due to 'maintaining of hyper molarity towards inner medullary intestitium in the kidneys'. [NEET-2019]

26. **Use of an artificial kidney during haemodialysis** may result in (i) reduced absorption of calcium ions from gastro-intestinal tract (ii) reduced RBC production. [NEET-2019]

27. **Reabsorption of Na^+ and water** from renal tubules due to **aldosterone** help in the prevention of diuresis. [NEET-2020]

28. Nitrogeneous waste is excreted in the form of **pellet** or **paste** by pavo. [NEET-2022]

29. Excretory Organs are Taenia (Flame cells), Paramecium (Contractile Vacuole), Periplaneta (Urecose gland), Pheretima (Nephridia) [NEET-2023]

30. **Loop of Henle** of juxta medullary nephron runs deep into medulla. [NEET-2024]