SARASWATI

HEAD OFFICE
208, CD, LOCAL SHOPPING CENTER
AGGARWAL SHOPPING PLAZA,

BRANCH -1
AYODHYA CHOWK SEC -3
ROHINI

BRANCH -2
DC CHOWK SEC- 9, ROHINI

9TH & 10TH MATHS / SCIENCE
11TH & 12TH – PHYSICS / CHEMISTRY / MATHS / BIOLOGY
EXCLUSIVE BATCH FOR NEET / JEE ASPIRANTS
Ph no. 9696 500 500 / 9696 400 400

Ch- 19 (Excretory products and their elimination)

1. Define excretion.

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2. Select the ammonotelic animals from the following:

Marine fishes, Aquatic insects, Mammals, Birds, Bony fishes

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3. Select the ureotelic animals from the following animals:

Marine fishes, Aquatic insects, Mammals, Birds, Reptiles

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4. Why is glomerular filtration also called as ultrafiltration?

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5. Define glomerular filtration rate (GFR).

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6. Urine becomes hypertonic as it flows through the decending limb of Henle's loop.

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7. Why does the filtrate become hypotonic in the ascending limb of Henle's loop?

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8. What is osmoregulation?

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9. Mention two metabolic disorders that can be diagnosed by analysis of urine.

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10. Fill in the gap:

Dialysis fluid = Plasma-…….

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2 marks

11. What are ammonotelic animals? Give two examples.

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12. What are ureotelic animals? Give two examples.

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13. Terrestrial animals are generally either ureotelic or uricotelic, not ammonotelic. Why?

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14. What is the significance of juxtaglomerular apparatus (JGA) in kidney function?

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15. Longer the loop of Henle, more concentrated or hypertonic is the urine. Justify.

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16. Describe the blood vessles, called vasa rectae found in relation to the uriniferous tubules.

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17. The following abbreviations are used in the context of excretory functions. What do they stand for?

(a) ANF (b) ADH (c) GFR (d) DCT

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18. Differentiate between glycosuria and ketonuria.

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3 marks

19. Name the basic nitrogenous catabolite produced during protein catabolism in humans.

In what form is it excreted out? Giving two reasons, explain why it is advantageous to eliminate it in the latter form rather than in its initial form.

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20. Draw a labelled sketch of the human urinary system, with its associated blood vessels.

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21. Describe the internal structure or anatomy of a human kidney.

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22. Draw a sketch showing the gross anatomy of human kidney along with the main blood vessels entering and leaving it. Label any six parts.

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23. Name the following:

(i) A chordate animal having flame cells as excretory structures.

(ii) Cortical portions projecting between the medullary pyramids in the human kidney.

(iii) A loop of capillary running parallel to the Henle's loop.

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5 marks

24. Explain the mechanism of urine formation in a human being.

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25. Give a brief account of the counter-current mechanism.

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26. Explain the autoregulatory mechanism of GFR.

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27. Match the items of column I with those of column II:

Column I	Column II
(i) Ammonotelism	(a) Birds
(ii) Bowman's capsule	(b) Water reabsorption
(iii) Micturition	(c) Bony fish
(iv) Uricotelism	(d) Urinary bladder
(v) ADH	(e) Renal tubule

28. Indicate whether the following statements are true or false:

(i) Micturition is carried out by a reflex.

(ii) ADH helps in water elimination, making the urine hypotonic.

(iii) Protein-free fluid is filtered from blood plasma into the Bowman's capsule.

(iv) Henle's loop plays an important role in concentrating urine.

(v) Glucose is actively reabsorbed in the proximal convoluted tubule.

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29. Fill in the blanks:

(i) Ascending limb of Henle's loop is ..... to water, whereas the descending limb is ..... to it.

(ii) Reabsorption of water from distal parts of the tubules is facilitated by hormone

(iii) Dialysis fluid contains all the constituents as in plasma except

(iv) A healthy adult human excretes (on an average)..... gm of urea/day.

30. Describe the role of liver, lungs and skin in excretion.

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31. A survey of animal kingdom shows that ammonia, urea and uric acid are the main nitrogenous wastes excreted by animals. Sudha raised a doubt, why the excretory wastes are different in different animals. Her neighbour, Anant helps her to clear the doubt.

(a) Why do animals excrete the nitrogenous wastes in different forms?

(b) Why cannot land animals excrete ammonia?

(c) What is the advantage of excretion of uric acid by birds?

(d) What value is shown by the excretion of such different waste products?

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32. Lata was given a list of names of excretory organs, such as green glands, nephridia, flame cells and Malpighian tubules.

(a) Help her to name an animal, for each of these structures.

(b) Apart from excretion, what other common function do they serve?

(c) What value is shown by these?

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33. Radha has been reading the structure of a nephron and the role played by the different parts of it in urine formation and osmoregulation; but there are certain mistakes and her elder brother helps her with a correct and detailed explanation.

(a) What are the two major parts of a nephron?

(b) What is a Malpighian corpuscle?

(c) Where is urine filtered from? Why is it called ultrafiltration?

(d) What value(s) is/are shown by her brother, in explaining the correct functions of nephrons?

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34. Mammals have the ability to produce concentrated urine when there is scarcity of water in the body. When there is enough water, there is excretion of more water in the urine.

(a) Name the hormone mainly involved in this regulation. How does it make urine hyperosmotic?

(b) What is counter current system in urine formation? Name the structures involved in it.

(c) What value is shown by these different mechanisms?

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