



BIOLOGY

BOOKS - BAL BHARTI

EXCRETION AND OSMOREGULATION

Can You Recall

1. Why are various waste products produced in the body of an organism?



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2. How are these wastes eliminated?



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Have You Ever Observed

1. When does urine appear deeply coloured?



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2. If we consume onion and garlic, we get bad breath. Why?



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Think About It

1. Do organisms differ in type of metabolic wastes they produce?



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2. During summer, we tend to produce less urine, why is it so?



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3. How much blood is supplied to kidney?



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4. What would happen if ADH secretion decrease due to any reason?





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Use Your Brain Power

1. Why ammonia is highly toxic?



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2. What would happen if human being has no option but to drink sea water?



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3. Creatinine is considered as index of kidney function. Give reason?



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4. In which regions of nephrons the filtrate will be isotonic to blood?



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5. If a person is undergoing kidney transplant, immunosuppressants are administered. Justify



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Find Out

1. You will study about a type of arthritis called gouty arthritis caused due to accumulation of uric acid in joints. Where does uric acid come from in case of ureotelic human beings?



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2. How do freshwater fishes and marine fishes carry out osmoregulation?



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Can You Tell

1. Why are kidneys called 'retroperitoneal'?



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2. Why urinary tract infections are more common in females than males?



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3. What is nephron? Which are its main parts?
Why are they important?



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4. Explain the mechanism of urine formation in detail.



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5. How do skin and lungs help in Excretion?

OR

Explain role of lungs and skin in excretion?



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6. What is the composition of sweat?



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7. When does kidney produce renin? Where is it produced in kidney?



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8. How do skin and lungs help in Excretion?

OR

Explain role of lungs and skin in excretion?



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9. Explain how electrolyte balance of blood plasma maintained.



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Exercise Choose Correct Option

1. Which one of the following organisms would spend maximum energy in production of nitrogenous waste?

A. Polar bear

B. Flamingo

C. Frog

D. Shark

Answer:



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2. In human beings uric acid is formed due to metabolism of..... .

- A. amino acids
- B. fatty acids
- C. creatinine
- D. nucleic acids

Answer:



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3. Visceral layer: Podocytes :: PCT :.....

A. Ciliated cells

B. Squamous cells

C. Columnar cells

D. Cells with brush border

Answer:



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4. Deproteinised plasma is found in _____.

A. Bowman's capsule

B. Descending limb

C. Glomerular capillaries

D. Ascending limb

Answer:



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5. Specific gravity of urine would.....if level of ADH increases.

A. remain unaffected

B. increases

C. decreases

D. stabilise

Answer:



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6. Define Micturition.

A. Urination

B. Urine formation

C. Uremia

D. Urolithiasis

Answer:



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7. Which one of the following organisms excrete waste through nephridia? cockroach, earthworm, crab, liver fluke.

A. Cockroach

B. Earthworm

C. Crab

D. Liver Fluke

Answer:



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8. Person suffering from kidney stone is advised not to have tomatoes as it has _____.

A. seeds

B. lycopene

C. oxalic acid

D. sour taste

Answer:



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9. Tubular secretion does not take place in

_____.

A. DCT

B. PCT

C. collecting duct

D. Henle's loop

Answer:



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10. The minor calyx

A. collects urine

B. connects pelvis to ureter

C. is present in the cortex

D. receives column of Bertini

Answer:



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11. Which one of the followings is not a part of human kidney?

A. Malpighian body

B. Malpighian tubule

C. Glomerulus

D. Loop of Henle

Answer:



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12. The yellow colour of the urine is due to presence of

A. uric acid

B. cholesterol

C. urochrome

D. urea

Answer:



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13. Hypotonic filtrate is formed in

A. PCT

B. DCT

C. LoH

D. CT

Answer:



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14. In reptiles, uric acid is stored in

A. cloaca

B. fat bodies

C. liver

D. anus

Answer:



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15. The part of nephron which absorbs glucose and amino acid is

A. collecting tubule

B. proximal tubule

C. Henle's loop

D. DCT

Answer:



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16. Bowman's capsule is located in kidney in the

A. cortex

B. medulla

C. pelvis

D. pyramids

Answer:



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17. The snakes living in desert are mainly

A. aminotelic

B. ureotelic

C. ammonotelic

D. uricotelic

Answer:



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18. Urea is a product of breakdown of

A. fatty acids

B. amino acids

C. glucose

D. fats

Answer:



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19. Volume of the urine is regulated by

- A. aldosterone
- B. ADH
- C. both a and b
- D. none

Answer:



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Exercise Answer The Following Questions

1. Doctors say Mr. Shaikh is suffering from urolithiasis. How it could be explained in simple words?



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2. Anitaji needs to micturate several times and feels very thirsty. This is an indication of

change in permeability of certain part of nephron. Which is this part?



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3. Effective filtration pressure was calculated to be 20 mmHg, where glomerular hydrostatic pressure was 70 mmHg. Which other pressure is affecting the filtration process? How much is it?



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4. Name any one guanotelic organism.



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5. Why are kidneys called 'retroperitoneal'?



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6. State role of liver in urea production.



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7. Why do we get bad breath after eating garlic or raw onion?



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8. John has two options as treatment for his renal problem : Dialysis or kidney transplants. Which option should he choose? Why?



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9. Amphibian tadpole can afford to be ammonotelic. Justify.



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10. Birds are uricotelic in nature. Give reason.



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Exercise

1. Prove that mammalian urine contains urea.



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