BIOLOGY

BOOKS - PREMIERS PUBLISHERS

EXCRETION

Evaluation Textbook Questions Answers

1. Arrange the following structures in the order that a drop of water entering the

nephron would encounter them.

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2. Name the three filtration barriers that solutes must come across as they move from plasma to the lumen of Bowman's capsule. What components of the blood are usually excluded by these layers?

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3. What forces promote Glomerular filtration? What forces opposes them? What is meant by net filtration pressure?

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4. Identify the following structures and explain their significance in renal physiology?

a. Juxtaglomerular apparatus

b. Podocytes

c. Sphincters in the bladder

d. Renal cortex

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5. Identify the podocytes structure and explain their significance in renal physiology?

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6. Identify the sphinctres in the bladder structure and explain their significance in renal physiology?

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7. Identify the renal cortex structure and explain their significance in renal physiology?

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8. In which segment of the nephron most of the re absorption of substances takes place?

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9. When a molecule or ion is reabsorbed from the lumen of the nephron, where does it go? If a solute is filtered and not reabsorbed from the tubule, where does it go?

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10. Match each of the following substances with its mode of transportation in proximal tubular reabsorption.

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11. Which segment is the site of secretion and regulated reabsorption of ions and pH homeostasis?

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12. What solute is normally present in the body to estimate GFR in humans?

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13. Which part of the autonomic nervous system is involved in Micturition process?

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14. Match the following terms.

1. α-receptor	(a) Afferent arteriole
2. Autoregulation	(b) Basal lamina
3. Bowman's capsule	(c) Capillary blood pressure
4. Capsule fluid pressure	(d) Colloid osmotic pressure
5. Glomerulus	(e) GFR
6. Podocyte	(f) JG cells
7. Vasoconstriction	(g) Plasma proteins
	(h) Norepinepherine

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15. If the afferent arteriole of the nephron constricts, what happens to the GFR in that nephron? If the efferent arteriole constricts what happens to the GFR in that nephron? Assume that no auto regulation takes place.

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16. How is the process of micturition altered by toilet training?

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17. Concentration of urine depends upon which part of the nephron

A. Bowman's capsule.

B. Length of Henle's loop

C. P.C.T.

D. Net work of capillaries arising glomerulus.

Answer: B

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18. If Henle's loop were absent from mammalian nephron, which one of the following is to be expected?

A. There will be no urine formation

B. There will be hardly any change in the quality and quantity of urine formed

C. The urine will be more concentrated

D. The urine will be more dilute

Answer: D

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19. A person who is on a long hunger strike and is surviving only on water, will have_____

A. Less amino acids in his urine

B. Macula densa cells

C. Less urea in his urine

D. More sodium in his urine

Answer: D

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20. What will happen if the stretch receptors of the urinary bladder wall are totally removed?

A. Micturition will continue

B. Urine will be continue to collect normally in the bladder

C. There will be micturition

D. Urine will not collect in the bladder

Answer: A

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21. The end product of Ornithine cycle is

A. carbon dioxide

B. uric acid

C. urea

D. ammonia

Answer: C

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22. Identify the wrong match

A. Bowman's capsule - Glomerular filtration

B. DCT - Absorption of glucose

C. Henle's loop - Concentration of urine

D. PCT - Absorption of Na^+ and K^+ ions

Answer: B

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23. Podocytes are the cells present on the

A. Outer wall of Bowman's capsule

B. Inner wall of Bowman's capsule

C. neck of nephron

D. Wall glomerular capillaries

Answer: D

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24. Glomerular filtrate contains

A. Blood without blood cells and proteins

B. Plasma without sugar

C. Blood with proteins but without cells

D. Blood without urea

Answer: D

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25. Kidney stones are produced due to deposition of uric acid and

A. silicates

B. minerals

C. calcium carbonate

D. calcium oxalate

Answer: D

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26. Animal requiring minimum amount of water to produce urine are

A. ureotelic

B. ammonotelic

C. uricotelic

D. chemotelic

Answer: B

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27. Aldosterone acts at the distal convoluted tubule and collecting duct resulting in the absorption of water through:

A. Aquaphorins

B. spectrins

C. GLUT

D. Chloride channels

Answer: A

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28. The hormone which helps in the reabsorption of water in kidney tubules is

A. cholecystokinin

B. angiotensin II

C. antidiuretic hormone

D. pancreozymin

Answer: C

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29. Malpighian tubules remove excretory products from

A. mouth

B. oesophagus

C. haemolymph

D. alimentary canal

Answer: C

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30. Identify the biological term.

Excretion, glomerulus, urinary bladder, glomerular filtrate, ureters, urine, Bowman's capsule, urinary system, reabsorption, micturition, osmosis, proteins.

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(e) Removal of unwanted substances from the body.

(f) Each contains a glomerulus.

(g) Carry urine from the kidneys to the bladder.

(h) Scientific term for urination.

(i) Regulation of water and dissolved substances in blood and tissue fluid.

(j) Consists of the kidneys, ureters and bladder.

(k) Removal of useful substances from glomerular filtrate.

(l) What solute the blood contains that are not present in the glomerular filtrate?

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43. Indentify the biological term Homeostasis, excretion, glomerulus, urea, glomerular filtration, ureters, urine, Bowman's capsule, urinary system, reabsorption, micturition, osmosis, glomerular capillaries via efferent arteriole, proteins.

Consists of the kidneys, ureters and bladder.

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48. With regards to toxicity and the need for dilution in water, how different are ureotelic and uricotelic excretions? Give examples of animals that use these types of excretion?

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49. Differentiate protonephridia from metanephridia.

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50. What is the nitrogenous waste produced by amphibian larvae and by the adult animal?

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51. How is urea formed in the human body? (OR) We are not consuming urea. But in our body urea is produced. Why?

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52. Differentiate cortical from medullary nephrons.

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53. What vessels carry blood to the kidneys? Is this blood arterial or venous?

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54. Which vessels drain filtered blood from the kidneys?

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55. What is tubular secretion? Name the substances secreted through the renal tubules.

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56. How are the kidneys involved in controlling blood volume? How is the volume of blood in the body related to arterial pressure?

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57. Name the three main hormones are involved in the regulation of the renal function?

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58. What is the function of antidiuretic hormone? Where is it produced and what stimull Increases or decreases its secretion?

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59. What is the effect of aldosterone on kidneys and where is it produced?

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60. What evolutionary hypothesis could explain the heart's role in secreting a hormone that regulates renal function?

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Other Important Questions Answers Choose The Correct Answer

1. The ..... animals can tolerate only narrow fluctuations in the salt concentration.

A. Osmoconformers

B. Euryhaline

C. Stenohaline

D. Osmoregulators

Answer: C

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2. Which is euryhaline animal of the following?

A. Tilapia

B. gold fish

C. sharks

D. otters

Answer: A

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3. ..... is the waste product of protein metabolism in spiders.

A. Hippuric acid

B. Quanine

C. Allantonic

D. Creatine

Answer: B

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4. Mammals and terrestrial amphibians mainly excrete urea and are called:

A. Uricoteles

B. Ammonoteles

C. Ureoteles

D. Gunotelic

Answer: C

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5. Each kidney of human weighs about ..... gms.

A. 120-280

B. 120-270

C. 130-170

D. 120-170

Answer: D

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6. The primitive kidneys of invertebrates are called:

A. protonephridia

B. Mesonephridia

C. Meganephridia

D. malpighian tubules

Answer: A

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7. The granular cells of the juxta glomerular apparatus, secrete an enzyme called

A. thymin

B. renin

C. ADH

D. angiotensin

Answer: B

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8. The process of release of urine from the bladder is called .....

A. micturition

B. malnutrition

C. holozoic nutrition

D. pasteurization

Answer: A

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9. The formation of hard stone like masses in the renal tubules of renal pelvis is called .....

A. uremia

B. gall stones

C. bladder stone

D. renal calculi

Answer: D

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10. The renal stone is formed mainly by the accumulation of:

A. salts of sodium oxalates and certain phosphates

B. calcium and sodium

C. creatinine

D. potassium and phosphate

Answer: A

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11. Renal stones can be removed by techniques like:

A. dialysis

B. medication

C. lithotripsy

D. holistic therapy

Answer: C

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12. Urine is a transparent yellowish fluid, because of the presence of the pigment called:

A. chlorocruorin

B. cytochrome

C. urochrome

D. haemocyanin

Answer: C

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13. Animals that excrete of its nitrogen in the form of ammonia are called:

A. ammonoteles

B. uricoteles

C. urioteles

D. aminoteles

Answer: A

 Watch Video Solution

14. Animals such as reptiles, birds and insects excrete uric acid crystals with a minimum ross of water called:

A. guanoteles

B. uricoteles

C. urioteles

D. aminoteles

Answer: B

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15. Excretory organ of platyhelminthes is ..... .

A. solenocytes

B. flame cells

C. rennette cells

D. green glands

Answer: B

 Watch Video Solution

16. ..... are the excretory structures in insects

A. Flame cells

B. Antennal glands

C. Malpighian tubules

D. Solenocytes

Answer: C

Watch Video Solution

17. ..... are the structural and functional unit of kidneys.

A. Neurons

B. Malpighian tubules

C. Nephrons

D. Flame cells

Answer: C

Watch Video Solution

18. Absense of ..... In Amphibians and fresh water fishes , produce dilute urine

A. Glomerulus

B. Node of ranvier

C. Nephrons

D. Henle's loop

Answer: D

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19. The ureter, blood vessels and nerves innervate the kidney through:

A. ureter

B. cortex

C. medulla

D. hilum

Answer: D

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20. The biosynthesis of urea takes place in:

A. blood

B. kidney

C. liver

D. brain

Answer: C

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21. Defects in ADH receptors or inability to secrete ADH leads to a condition called .....

A. diabetes mellitus

B. diabetes insipidus

C. Grave's disease

D. renal failure

Answer: B

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22. Increase in amount of urea in blood is called:

A. nephritis

B. Uremia

C. Renal calculi

D. cystitis

Answer: B

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23. ..... is not a symptom of Renal failure.

A. Increase in urea in blood

B. Formation of hard.stone like masses in renal tubules

C. inflammation of the glomeruli

D. all the above

Answer: D

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Other Important Questions Answers Answer The Following

1. Mention the three homeostatic process of kidneys

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2. What is meant by osmotic regulation?

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3. Define ionic regulation.

Watch Video Solution

4. Define the Nitrogen excretion.

Watch Video Solution

5. Distinguish between Osmoconformers and Osmoregulators.

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6. Distinguish between Stenohaline and Euryhaline animals.

Watch Video Solution

7. What is excretion?

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8. What are the different waste products of protein metabolism.

9. List the major nitrogenous waste products.

10. Define ammonoteles.

11. What are uricoteles?

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12. Define ureoteles.

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13. The animal kingdom shows a wide variety of excretory structures. Name some of the

excretory organs and in which animals they are present as well as its functional aspect.

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14. What are the structures involved in the excretory system of human? Write the structure of kidney with neat diagram.

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15. Describe the internal anatomy of the kidney with neat diagram of L.S. of kidney.

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16. Explain the structure of nephron.

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17. Write short notes on the capillary bed of nephrons.

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18. Name the processes involved in urine formation.

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19. Describe the process of glomerular filtration.

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20. The glomerulus of the nephron filtered the blood, and it is called glomerular filtrate. While it is passed through the different segments of nephron, certain substances are selectively reabsorbed. What are the substance reabsorbed and in which segment. Explain.

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21. How ADH by means of feedback system regulates the function of kidneys.

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22. What is diabetes insipidus? How is it called? What are the symptoms?

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23. What is the role of ANF in kidneys? How it acts antagonistically to the renin angiotensin system?

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24. What are the clinical diagnostic results of testing urine in case of diabetes mellitus.

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25. In what situation there is a chance for the production of hypotonic urine

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26. Name and the role played by the other organs in excretion apart from kidneys.

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27. What are the disorders related to the excretory system ?

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28. Why in female, urinary infection is more easy and common than in males?

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29. Write a short note on Haemodialysis.

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30. Write about an artificial kidney used in dialysis process .

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31. What is kidney transplantation ? When and how it can be done ?

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32. What are aquaporins ?

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33. What is osmolarity and how is it expressed.

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34. Describe how counter current multiplier mechanism helps in the formation of concentrated urine in human .

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Solution To Textual Questions

1. What is the importance of having a long loop of Henle and short loop of Henle in a nephron?

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2. A person with cirrhosis of the liver has lower than normal levels of plasma proteins and higher than normal GFR. Explain why a decrease in plasma protein would increase GFR.

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3. List various pathways involved in the homeostatic compensation in the case of severe dehydration.

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4. Angiotensin Converting Enzyme inhibitors (ACE inhibitors) are used to treat high blood pressure. Using a flow chart, explain why these drugs are helpful in treating hypertension.

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5. Consider how different foods affect water and salt balance, and how the excretory system must respond to maintain homeostasis.

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Case Study

1. Both the kidneys of Ravi (28 years) were not functioning and he was undergoing dialysis. He was admitted to a hospital with renal failure. His mother Suganthi (47 years) was willing to donate one of her kidneys to her son after she was given counseling. Their blood groups were matching and later approval was obtained from transplant committee and technical committee. Operation was performed for 5 hrs. He was administered with immunosuppressive drugs and anti inflammatory drugs. He recovered from the ,

operation and returned home.

Name the disease Ravi was suffering from.

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What relation is the donor of the kidney ?

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1. Name the disease Ravi was suffering from.

2. What relation is the donor of the kidney

3. Name the type of matching done to perform the transplant.

4. Why approval has to be got from transplant committee and technical committee?

5. What do you think about Suganthi donating her kidney?

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1. Name the disease Ravi was suffering from.

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