BIOLOGY

BOOKS - MAXIMUM PUBLICATION

EXCRETORY PRODUCTS AND THEIR ELIMINATION

Exercise

1. Which one of the following is also known as antidiuretic hormone?

A. Oxytocin

B. Vasopressin

C. Adrenaline

D. Calcitonin

Answer: A

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2. A large quantity of one of the following is removed from our body by lungs.

A. CO_2 only

B. H_2O only

C. CO_2 and H_2O

D. ammonia

Answer: A::B::C::D

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3. The pH of human urine is approximately

A. 6.5

B. 7

C. 6

D. 7.5

Answer: C

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4. Which of the following pairs is wrong?

A. Uricotelic-Birds

B. Ureotelic -Insects

C. Ammonotelic -Tadpole

D. Ureotelic - Elephant

Answer: A::C::D

5. Which one of the following statements is incorrect?

A. The medullary zone of kidney is divided into a few conical masses called

medullary pyramids projecting into the calyces.

B. Inside the kidney the cortical region extends in between the medullary pyramids as renal pelvis.

C. Glomerulus alongwith Bowman's capsule is called the renal corpuscle

D. Renal corpuscle, proximal convoluted tabule (PCT) and distal convoluted

tubule (DCT) of the nephron are situated

in the cortical region of kidney

Answer: A::B::C::D

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6. Take the odd one justify? GFR, JGA, ANF, ADH,

TSH

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7. Identify the ammonotelic animal from the following and give reason . (Man, Crow, Lizard, Tadpole)

8. While studying the excretory system in man, a student noticed some words. RAAS and JGA. Can you help him to expand these tems.

9. In ureotelic animals, urea is produced in

A. Kidney

B. Liver

C. Flame cells

D. Malpighian tubules

Answer:

10. State whether true or false and correct the false statements if any : 

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11. Draw the schematic diagram of the urine formation. (Hint: Show all the three process involved)

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12. Complete the following sentences 

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13. Pick out the correct word from list provided

(Myasthenia gravis, Uremia, Angina, diuresis)

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14. Classify the following animals according to their type of excretion. Frog, Tadpole, birds, man, Turtle, shark, Insect,

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15. Tadpole is ammonotelic while the frog is ureotelic. Comment on this statement.

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16. Observe the dlagram and answer the following questions. Label the parts (1) and (2).

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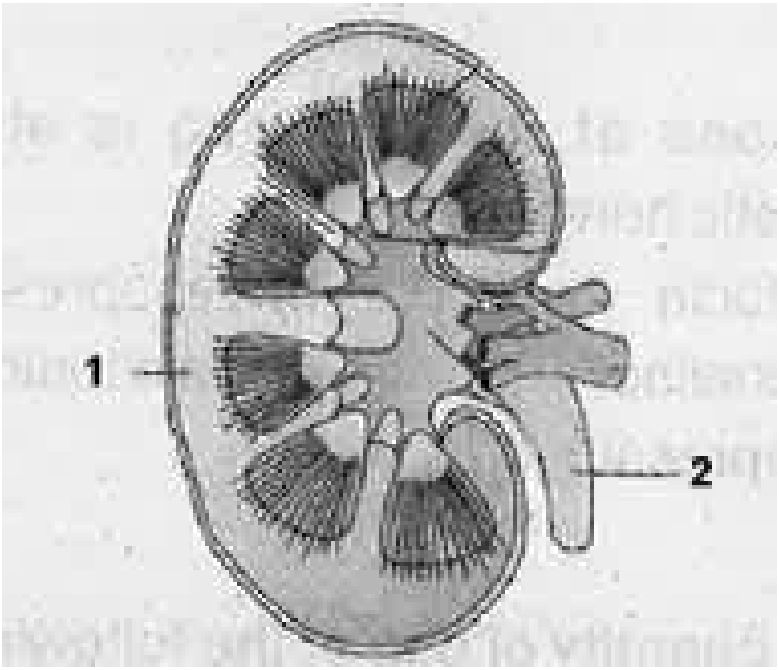
17. Observe the dlagram and answer the following questions. Name the functional unit

of the kidney.



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18. Rearrange the following parts in their correct way. Glomerulus → Capsular space →

loop of Henle → PCT → DCT → Collecting duct → Collecting tubule → Ureter → Renal pelvis → Urethra → Urinary bladder.

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19. Fill in the gaps:

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20. Brain controls the kidney action. Name the hormones involved in this.

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21. Brain controls the kidney action. Name the hormones involved in this.

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22. A patient approaches a doctor having symptoms like excretion of large amount of urine, excessive thirst and dehydration. Identify the disease.

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23. A patient approaches a doctor having symptoms like excretion of large amount of urine, excessive thirst and dehydration. Identify the disease.

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24. A table showing the average quantity of urine in a person in two different seasons are given. Compare it. Do you agree with this

table? State the reason for producing different Quantity in different season.

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25. Teacher asks one of the student to name the excretory organs in man. He names three organs beside kidney. Teacher appreciates him for the correct answer. What was his answer?

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26. Teacher asks one of the student to name the excretory organs in man. He names three organs beside kidney. Teacher appreciates him for the correct answer. What was his answer?

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27. A patient with renal failure in waiting for a kidney donor for a transplantation operation. The urea level is high and the patient is developing symptoms of uremia. What

method you can suggest to keep the patient live till a donor can be found. Explain the principle behind it.

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28. About 125ml of glomerular filtrate is produced per minute in our kidney. However 1ml of urine is pro duced each minute. What happens to the other 124ml of the filtrate.

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29. Consumption of alcohol tends to frequent urination. a) Name the hormone that control it.

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30. Consumption of alcohol tends to frequent urination. Draw a flow chart showing the action of ethanol present in alcohol and its consequences on urinary system.

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31. Prepare a flow chart showing hormonal control by Juxta glomerular apparatus (JGA) in regulation of kidney function.

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32. Flow of blood in vasa recta is known as counter current system. Give reason.

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33. Micturition is an involuntary as well as a voluntary process. Justify the statement

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34. In alcoholic drinkers the urine is dilute. Why?

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35. Distinguish between diabetis mellitus and diabetis insipedus

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36. The failure of removing toxic substances from the blood ultimately leads kidney failure.How is it temporarily solved.

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37. The failure of removing toxic substances from the blood ultimately leads kidney failure. Name the machine is used.

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38. State the differences between the following. Tubular reabsorption and Tubular secretion.

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39. State the differences between the following. ADH and RAAS.

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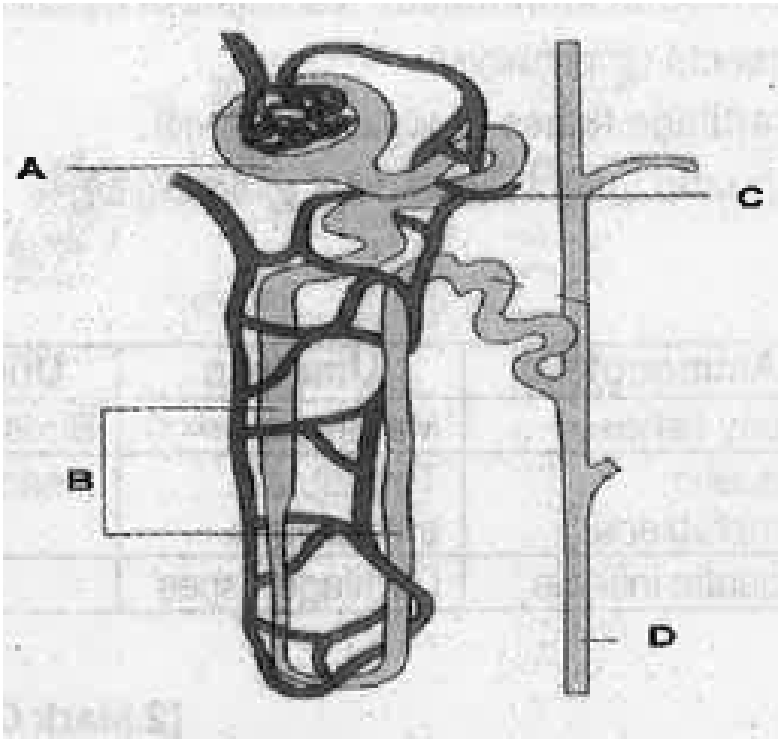
40.



What does the diagram represent?

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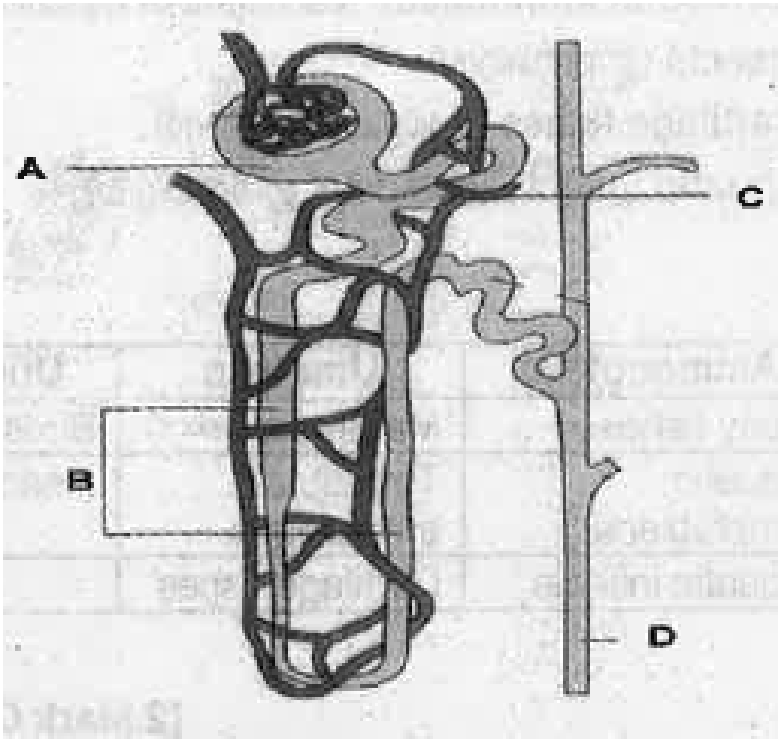
41.



Name the parts A, B, C, D.

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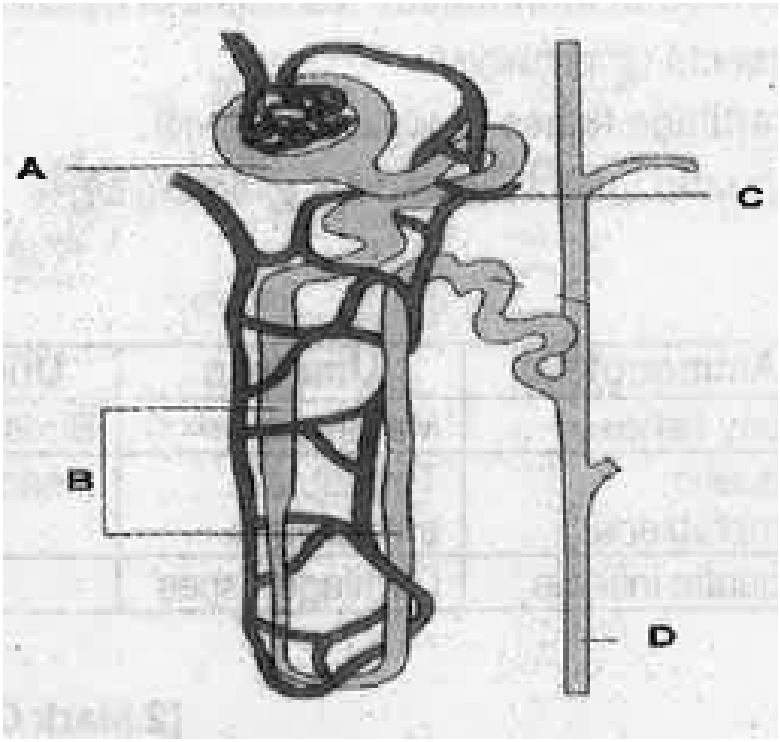
42.



What is the physiological function taking place in part 'B'.

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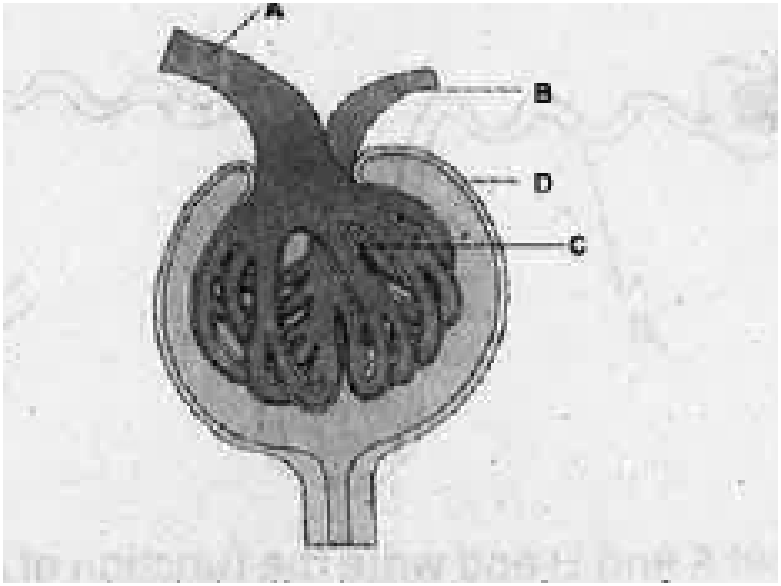
43. Observe the diagram and answer the questions.



Identify the labelled parts a, b, c, d.

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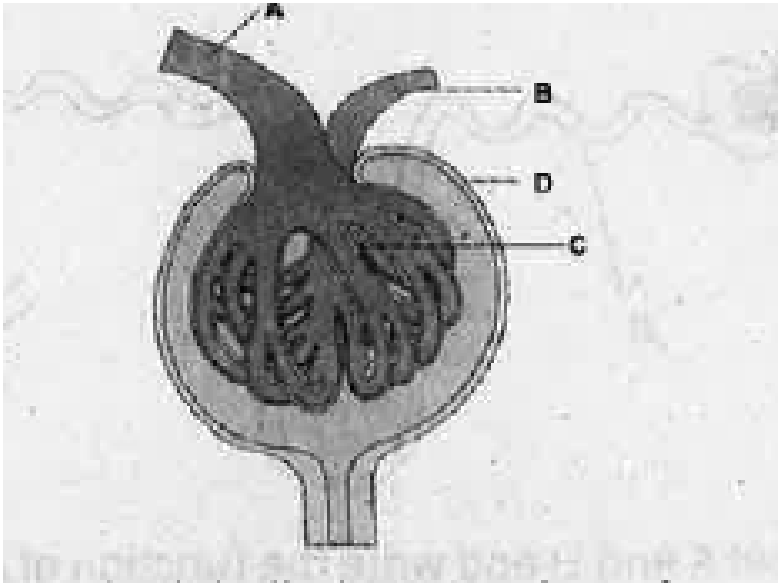
44. Observe the diagram and answer the questions.



What does the diagram represents?

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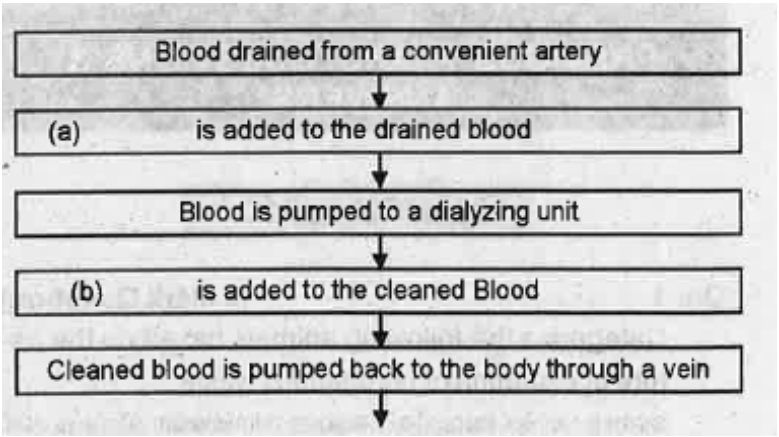
45. The steps involved in the treatment of a uremic patient is given below. Complete the missing steps (a) and (b)



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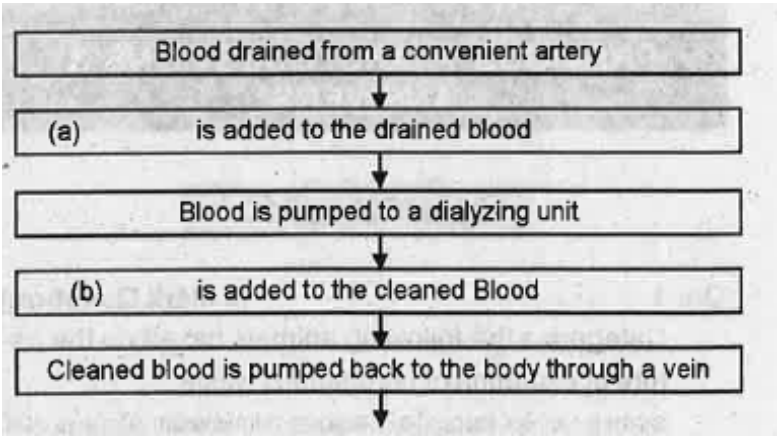
46. The steps involved in the treatment of a uremic patient is given below.



Name the organ which is under failure

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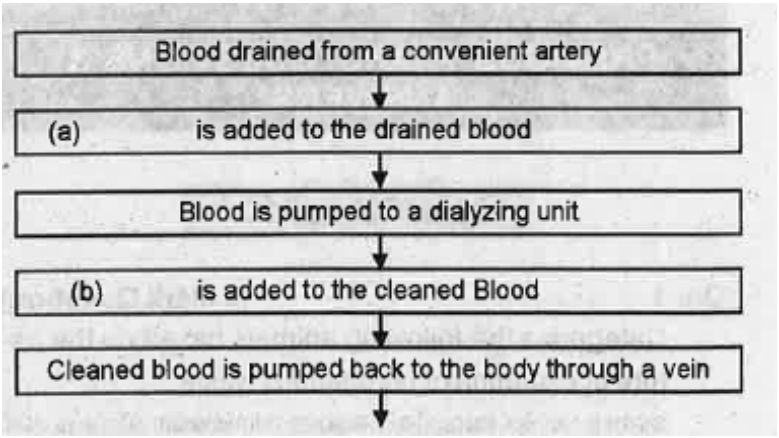
47. The steps involved in the treatment of a uremic patient is given below.



Name the organ which is under failure

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48. The functions of kidney is efficiently regulated by hormonal feed back mechanism involving the hypothalamus, JGA and heart. Br Name the mechanism by which JGA.plays a complex regulatory role.

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49. The functions of kidney is efficiently regulated by hormonal feed back mechanism involving the hypothalamus, JGA and heart. Br

Mention the feed back which act as a check on the above mechanism.

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50. Note the relationship between the first two words and suggest a suitable word in the missing place.

a) Cockroach - Malpighian Tubule; Flatworm - _____
b) Man - Kidney ; Earthworm- _____
c) Prawn - Greengland ; Amphioxus- _____

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51. Categorize the following animals based on the na ture of excretion of nitrogenous waste. Mammals, Bony Fishes , Birds, Aquatic amphibians, Terrestrial amphibians, Insects, Cartilage fishes, Aquatic insects

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52. In an informal discussion in your class, your friend made a comment that "Malphigean tubules are the kidneys of a cockroach". How will you evaluate this statement?

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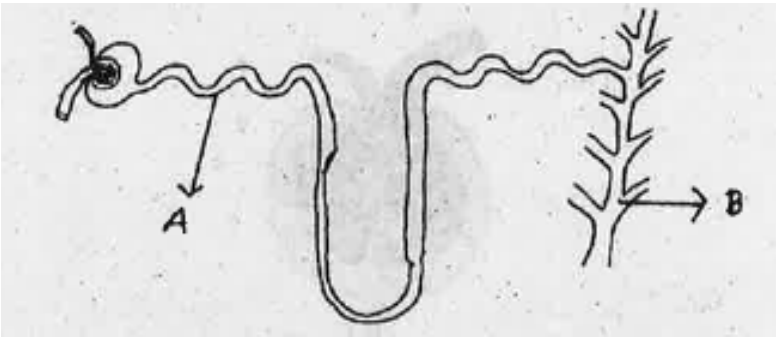
53. Observe the figure. Br No need to redraw the figure.



Label A and B and write the function of A and B.

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54. Prepare a flow chart of filtrate flow in the nephrone using the following terms. Collecting duct PCT, DCT, Ascending limb of Henle's loop, descending limb of Henle's loop. Bowman's capsule. Counter current system plays an important role in concentrating urine Name any two regions inside the kidney, where the counter current system is seen.

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55. Complete each of the following sentences using appropriate words.

a) Ascending limb of Henle's loop is ..... to water whereas the descending limb is ..... to water.
b) An excessive loss of fluid from the body stimulates the hypothalamus to release ..... hormone from the .....

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56. Identify the odd one and write the common feature of other items. Nephridia, Malpighian tubule, Spicules, Kidney, Flame cells..

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57. How the counter current mechanism helps to maintain the concentration gradient in the medullary interstitium?

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58. On a hot day would you expect your level of ADH in blood to be high or low? Explain

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59. In a Biology class related to excretion in the human body, a student gave an opinion that in every minute about 2% of the total blood volume of the body is converted to GFR whereas only 1% of this GFR is eliminated as urine. Evaluate this opinion and sub stantiate your answer.

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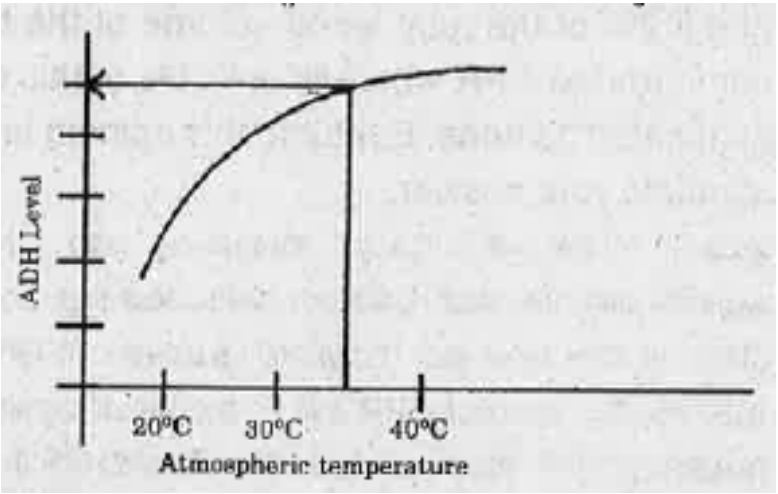
60. The output of urine Increases in cold days while de creases in hot and sunny days. Can you give a rea son for this phenomenon as realized from the graph given below?



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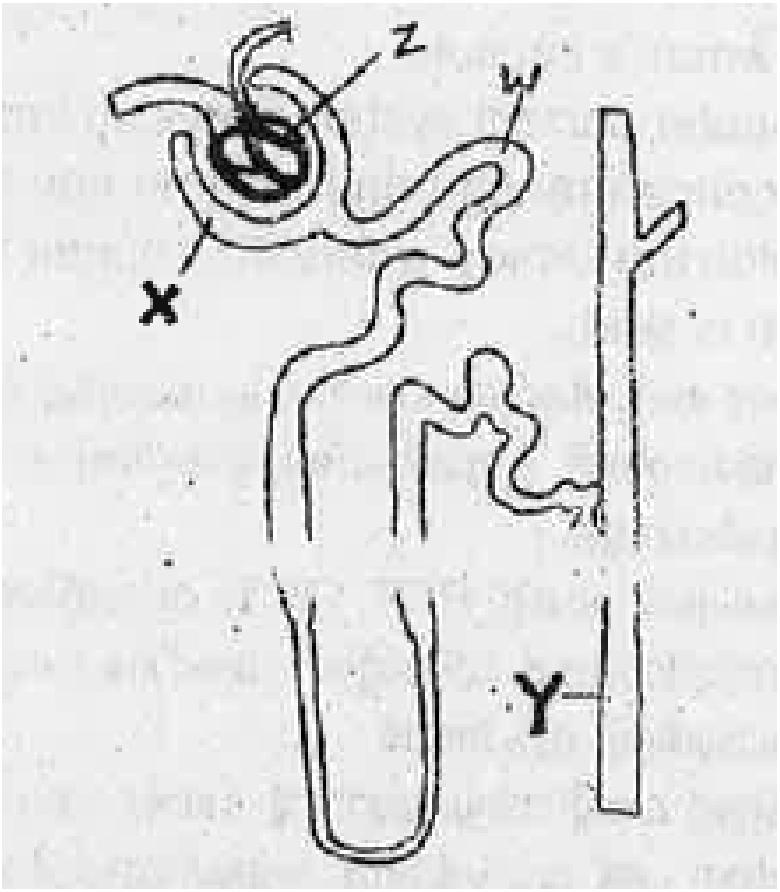
61. A diagrammatic representation of a nephron is given. Identify the parts labelled es



X and Y.

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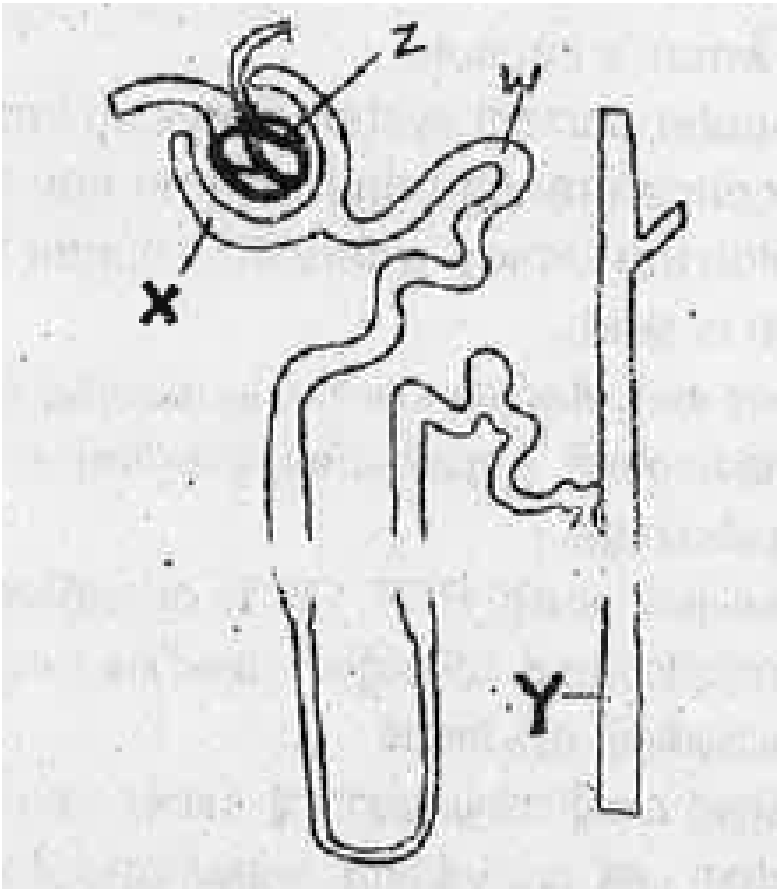
62. A diagrammatic representation of a nephron is given. Which part/parts of a nephron constitute the malpighian body?



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63. Terrestrial animals are either ureotelic or uricotelic not ammonotelic. Evalute the statement.

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64. The functioning of human kidney is efficiently moni tored and regulated by hormonal actions of hypo thalamus pituitory, JGA and to a certain extent by heart. Do you agree with this statement?

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65. The functioning of human kidney is efficiently moni tored and regulated by hormonal actions of hypo thalamus pituitory, JGA and to a certain extent by heart. Justify your answer with suitable reasons.

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66. Uricotelism is more advantageous than ureotelism and ammonotelism in strictly terrestrial animals on the basis of water conservation in the body. Justify.

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67. Prepare two matching pairs from the given list of animals and excretory organs.

Animals ജന്തുക്കൾ	Excretory organs വിസർജ്ജന അവയവങ്ങൾ
a) Prawn ചെമ്മീൻ	i) Nephridia നെഫ്രിഡിയ
b) Cockroach പാറ്റ	ii) Antennal gland ആന്റെന്നൽ ഗ്രന്ഥി
c) Earthworm മണ്ണിര	iii) Flame cells ഫ്ളെയിം കോശങ്ങൾ
	iv) Kidneys കിഡ്നികൾ

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68. Define Glomerular Filtration Rate(GFR)

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69. Explain the autoregulatory mechanism of GFR

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

a) Micturition is carried out by a reflex
b) ADH helps in water elimination, making the urine hypotonic.
c) Protein-free fluid is filtered from blood plasma into the Bowman's capsule.
d) Henle's loop plays an important role in concentrating the urine.
e) Glucose is actively reabsorbed in the proximal convoluted tublue.

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71. Give a brief account of the counter mechanism.

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72. What is meant by the term osmoregulation?

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73. Match the Items of column I with those of colurn II

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

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74. Name the following.

a) A chordate animal having flame cells as excretory structures.
b) Cortical portions projecting between the medullary pyramids in the human kidney.
c) A loop of capillary running parallel to the Henle's loop.

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75. Fill in the gaps.

a) Ascending limb of Henle's loop is ..... to water whereas the descending limb is ..... to it.
b) Reabsorption of water from distal parts of the tubules is facilitated by hormone .....
c) Dialysis fluid contain all the constituents as in plasma except .....
d) A healthy adult human excretes (on an average) ..... gm of urea/day.

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

A. Urine will not collect in the bladder

B. Micturition will continue

C. Urine will continue to collect normally in the bladder

D. There will be no micturition

Answer: C

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77. Green glands present in some arthropods help in

A. respiration

B. excretion

C. digestion

D. reproduction

Answer: B

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78. Excretory product of spider is

A. uric acid

B. ammonia

C. guanine

D. None of these

Answer: C

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79. Which one is the component of omithine cycle

A. Ornithine, citrulline and fumaric acid

B. Omithine, citrulline and arginine

C. Omithine, citrulline and alanine

D. Amino acids are not used

Answer: B

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80. Urea synthesis occurs in

A. kidney

B. liver

C. brain

D. muscles

Answer: B

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81. Renin is secreted from

A. juxtaglomerular cells

B. podocytes

C. nephridia

D. stomach

Answer: A

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82. Loop of Henle is associated with

A. excretory system

B. respiratory system

C. reproductive system

D. digestive system

Answer: A

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83. If one litre of water is introduced in human blood, then

A. BMR increases

B. RBC collapses and urine production increases

C. RBC collapses and urine production decreases

D. BMR decreases

Answer: B

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84. The urine is

A. hypotonic to blood and isotonic in medullary fluid

B. hypotonic to bloodand isotonic to medullary fluid

C. isotonic to blood and hypotonic to medullary fluid

D. hypertonic to blood and isotonic to medullary fluid

Answer: D

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85. Which substance is in higher concentration in blood than in glomerular filtrate?

A. Water

B. Glucose

C. Urea

D. Plasma proteins

Answer: D

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86. A large quantity of fluid is filtered every day by the nephrons in the kidneys. Only about 1% of it is excreted as urine. The remaining 99% of the filtrate

A. gets collected in the renal pelvis

B. is lost as sweat

C. is stored in the urinary bladder

D. is reabsorbed into the blood

Answer: D

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87. The characteristic that is shared by urea, uric acid and ammonia is/are

I. They are nitrogenous wastes.
II. They all need very large amount of water for excretion.
III. They are all equally toxic.
IV. They are produced in the kidneys.

A. I and III

B. I and IV

C. I,III and IV

D. I only

Answer: D

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88. A bird excrates nitrogenous waste materials in the form of?

A. uric acid

B. ammonia

C. urea

D. amino acids

Answer: A

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89. Which of the following is correct with reference to haemodialysis?

A. Absorbs and resends excess of ions

B. The dialysis unit has a coiled cellophane tube

C. Blood is pumped back through a suitable artery after haemodialysis

D. Anti-heparin is added prior to haemodialysis

Answer: B

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90. Find the incorrect statement regarding mechanism of urine formation in man.

A. the glomerular filtration rate is about 125 mL/min

B. the ultra filtration is opposed by the colloidal osmotic pressure of plasma

C. the counter current system contributes in diluting the urine

D. aldosterone induces greater reabsorption of sodium

Answer: C

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91. The excretory material of bony fish is

A. urea

B. protein

C. ammonia

D. amino acid

Answer: C

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

A. urea

B. uric acid

C. urochrome

D. bilirubin

Answer: C

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93. Malpighian tubules are

A. excretory organs of insects

B. excretory organs of frog

C. respiratory organs of insects

D. endocrine glands of insects

Answer: A

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94. The size of filtration slits of glomerulus

A. 10 nm

B. 20nm

C. 15nm

D. 25nm

Answer: D

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95. The conversion of dangerous nitrogenous waste into less toxic excretory matter is camied out in man in the

A. blood

B. liver

C. kidney

D. skin

Answer: B

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