BIOLOGY

BOOKS - CENGAGE BIOLOGY (HINGLISH)

EXCERETORY PRODUCTS AND THEIR ELIMINATION

Exercises

1. The animals which do not actively control the osmotic condition of their body fluids are

A. Osmoconformers

B. Osmoregulators

C. Hyperosmotic

D. Hypertonic

Answer: A

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2. Which of the following can be termed as osmoconformers?

A. All marine invertebrates

B. Hagfish

C. All fresh water invertebrates

D. Both (1) and (2)

Answer: D

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3. A fresh water fish maintains osmoregulation by

A. Continuously taking in water and eliminating excess of salts

B. Eliminating excess of water and taking up salts from the environment

C. Taking both water and salt from the environment

D. Eliminating both salt and water into the environment

Answer: B

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4. Which of the following means is used by fresh water organisms to prevent net gain of water or net loss of body salts?

A. Contractile vacuole

B. Large volume of dilute urine

C. Ionocytes

D. All of these

Answer: D

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5. Marine bony fish have body fluids hypotonic to sea water and tend to lose water from the body through

(a) Gill membrane (b) Oral membrane (c) Anal membrane

A. (a) only

B. (a), (b) and (c)

C. (a) and (c) only

D. (b) and (c) only

Answer: B

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6. Divalent cations are generally eliminated in marine fishes through

A. Gill membrane

B. Anal membrane

C. Fecal matter

D. Oral membrane

Answer: C

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7. Body fluids of shark and coelacanths can be termed as

A. Hyperosmotic and hypoionic to sea wate

B. Hypo-osmotic and hypoionic to sea water

C. Hyperosmotic and hyperionic to sea water

D. Hypo-osmotic and hyperionic to sea water

Answer: A

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8. Consider the following water conservation mechanisms:

(a) Nasal countercurrent mechanism

(b) Dependence on metabolic water

(c) Highly hypertonic urine

(d) Living more on protein rich diet A kangaroo rat living in desert can survive without drinking water because of

A. (a), (b) and (c)

B. (a), (b) and (d)

C. (b), (c) and (d)

D. (a), (c) and (d) only

Answer: A

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9. Select the true statement.

A. In fishes, kidney plays a major role in ammonia excretion.

B. Ammonia is 100,000 times less toxic than urea

C. Sharks retain a large amount of urea in the blood as a major osmolyte to balance the osmolarity of the body fluids.

D. Most terrestrial reptiles excrete ammonia.

Answer: C

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10. One of the following can retain a large amount of urea in the blood and tissue fluid.

A. Mammals including man

B. Toad, frog, prawn

C. Sharks, electric ray, sting ray

D. Alligators, terrapins, turtles

Answer: C

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11. Deamination is the first step in urea formation. It means the

A. Reduction of ammonia

B. Oxidation of ammonia

C. Addition of amino group to a non-amino organic molecule

D. Removal of amino group from an amino acid

Answer: D

12. Removal of metabolic waste in the form of urea is called

A. Ammoniotelism

B. Ureotelism

C. Uricotelism

D. Aminotelism

Answer: B

13. Uric acid is produced by the breakdown of

A. Proteins

B. Amino acids

C. Nucleic acids

D. Starch

Answer: C

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14. Guano, the fecal matter of birds contains

A. Insoluble crystals of uric acid

B. Insoluble crystals of urates

C. Both (1) and (2)

D. Urea

Answer: C

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15. Flame cells (solenocytes) are excretory structures of

A. Annelida

B. Arthropoda

C. Flat worms

D. Crustaceans (prawn)

Answer: C

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16. Antennary or green glands which are excretory and osmoregulatory organs of crustacean consist of

A. End sac

B. Renal sac

C. Antenna

D. Lateral and transverse ducts

Answer: A

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17. The kidneys not only remove the waste products from the blood but also play a very important role in maintaining

A. Equilibrium of the body

B. Temperature of the body

C. Constant composition of the blood irrespective of the nature of the food or fluid intake

D. Blood pressure constant

Answer: C

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18. The outer cortex of the kidney in a TS appears granular or dotted because of

A. Granular cytoplasm

B. The presence of loop of Henle

C. The presence of collecting ducts

D. Much convoluted uriniferous tubules and Malpighian corpuscles in this region

Answer: D

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19. The concavity on the medial side of kidney is known as

A. Renal pelvis

B. Hilum

C. Calyces

D. Pyramid

Answer: B

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20. Podocytes are associated with

A. PCT part of nephron

B. Glomerulus

C. Bowman's capsule

D. Loop of Henle

Answer: C

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21. The smallest functional unit of kidney is

A. Nephron

B. Collecting tubule

C. Glomerulus

D. Bowman's capsule

Answer: A

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22. Henie's loops are found in those animals which excrete hypertonic urine. One of the following does not have Renie's loop.

A. Birds

B. Mammals

C. Frogs

D. None of these

Answer: C

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23. The thin segment of descending limb of Loop of Henle is lined by

A. Columnar cells

B. Flat cells

C. Cuboidal cells

D. Pyramidal cells with characteristic brush border

Answer: C

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24. Collecting tubes or ducts combine to form

A. Duct of Bellini

B. Bidder's canal

C. Columns of Bertin

D. Ureter

Answer: A

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25. Brush border surface can be taken as the characteristic feature of

A. PCT

B. Bowman's capsule

C. Loop of Henle

D. DCT

Answer: A

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26. The first, fourth-fifth portion of the descending limb is lined by

A. Simple squamous epithelium

B. Stratified squamous epithelium

C. Cuboidal epithelium

D. Columnar epithelium

Answer: C

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27. Which of the following statement is not true w.r.t. nephron?

A. Cortical nephrons are more common.

B. Cortical nephrons lack vasa recta.

C. In juxtamedullary nephrons, the blood first passes through vasa recta and then through the capillaries of glomerulus

D. The glomeruli of juxtamedullary nephrons are placed close to the inner

margin of the cortex.

Answer: C

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28. Which of the following defines the net filtration pressure (NFP)?

A. BCOP - (GHP + CHP)

B. GHP - (BCOP + CHP)

C. (BCOP + GHP) - CHP

D. (GHP- CHP) + BCOP

Answer: B

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29. Which of the following is correct?

A. Afferent arteriole is narrower than the efferent arteriole.

B. Efferent venule is narrower than vein

C. Efferent arteriole is narrower than afferent arteriole

D. Both afferent and efferent arteriole are of same diameter.

Answer: C

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30. The glomerular filtration rate is

A. 125 mL/min

B. 180 L/day

C. 1300 mL/min

D. Both (1) and (2)

Answer: D

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31. If the GFR is 125 mL/min and the renal plasma flow is 700 mL/min, the filtration fraction is

A. About 6%

B. About 18%

C. About 12%

D. About 24%

Answer: B

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32. Which of the following mechanism will operate mainly to check variation in flow to

the glomerulus in case of fluctuation in blood pressure?

A. Counter current mechanism

B. Myogenic mechanism

C. Adam's stoke condition

D. Neurogenic mechanism

Answer: B

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33. One of the following is impermeable to water

A. PCT

B. DCT

C. Descending limb of Renie's loop

D. Ascending limb of Henle's loop

Answer: D

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34. Active reabsorption of $Na(+), K^{+}$ takes place in

A. DCT

B. PCT

C. Ascending limb of Henle's loop

D. All of these

Answer: D

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35. Tubular secretion helps to maintain a proper acid-base balance by removing one of the following from blood

A. H^+ ions and ammonia

B. Uric acid

C. H^+ ions and urea

D. Ammonia and creatinine

Answer: A

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36. Concentration of sodium and chloride ions is lowest

A. Near the cortex

B. Deep in medulla

C. In the interstitial fluid

D. In the middle of Henle's loop

Answer: A

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37. Which statement is wrong?

A. The counter current mechanism changes the isotonic glomerular filtrate into hypertonic urine by increasing salt concentration around the nephron and collecting tubule.

B. The wall of collecting tubule is permeable to water whereas ascending limb is impermeable to water.

C. The absorption of water in DCT is facultative

D. As the filtrate passes through the ascending limb, sodium is transported passively in ascending thick segment.

Answer: D

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38. Which of the following enzyme is produced in the kidneys ?

A. Rennin

B. Renin

C. Uricase

D. Arginase

Answer: B

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39. Angiotensin-II increases the blood volume by

A. Signaling PCT to reabsorb more NaCl and water

B. Stimulating adrenal gland to release aldosterone

C. By stimulating the release of ADH

D. All of these

Answer: D

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40. Reabsorption of Na^+ is controlled by

A. Vasopressin or ADH

B. Aldosterone

C. Renin

D. Rennin

Answer: B

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41. When the volume of body fluid falls below normal, ADH

A. Decreases permeability of distal convoluted tubule and collecting tubule

B. Increases permeability of distal convoluted tubule and collecting tubule

C. Has nothing to do with permeability of convoluted tubule

D. Decreases permeability of proximal convoluted tubule

Answer: B

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42. The reabsorption of water in the kidneys is under the control of a hormone

A. STH

B. ACTH

C. LH

D. ADH

Answer: D

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43. The yellow color of urine is due to

A. Uric acid

B. Urea

C. Urochrome

D. Melanin

Answer: C

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44. Vitamin excreted by urine in higher vertebrates is

A. A

B. D

C. K

D. C

Answer: D

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45. Hematuria is the disorder involving

A. Loss of blood through the urine

B. Loss of hemoglobin in RBC

C. Loss of glucose in urine

D. Increase in the concentration of blood urea

Answer: A

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46. The retroperitoneal kidney is

A. Kidney of fish

B. Kidney covered by peritonium on ventral side

C. Kidney covered by peritoneum on dorsal side

D. Kidney uncovered by peritoneum on dorsal side.

Answer: D

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47. Difference between glomerular filtrate and plasma is of

A. Proteins

B. Potassium

C. First is white whereas later is yellow

D. First is yellow whereas latter is white

Answer: A

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48. A condition of failure of kidney to form urine is called

A. Diuresis

B. Hematuria

C. Anuria

D. Ketonuria

Answer: C

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49. Diuresis is a condition in which

A. The excretory volume of urine increases

B. The excretory volume of urine decreases

C. The kidney fails to excrete urine

D. Water balance of the body is disturbed

Answer: A

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50. Presence of RBC in urine is called

A. Anuria

B. Hematuria

C. Glycosuria

D. Ketonuria

Answer: B

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51. Ornithine cycle is related to

A. Respiration

B. Excretion

C. Digestion

D. Nutrition

Answer: B

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52. Volume of urine is regulated by

A. Aldosterone

B. Aldosterone and ADH

C. Aldosterone, ADH and testosterone

D. ADH

Answer: D

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53. Reabsorption of glucose from glomerular filtrate occurs in

A. Collecting tube

B. Loop of Henle

C. Proximal convoluted tubule

D. Distal convoluted tubule

Answer: C

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54. Patients of diabetes have glucose in urine because

A. Glucose is not absorbed from GF

B. Glucose is absorbed from GF

C. Glandular cells secreted glucose in GF

D. Concentration of glucose is more in GF as compared to its normal amount

Answer: D

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55. Number of pyramids in the kidney of a man are

A. 4

B. 6

C. 8

D. 12

Answer: C

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56. Na^+ and CI^- both are removed by

A. Ascending limb of Henle 's loop

B. Proximal convoluted tubule

C. Both (1) and (2)

D. Descending limb of Henle's loop

Answer: C

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57. Excretion involves process in which

A. Harmful substances are stored in cells before being eliminated

B. Urine is forced out from urinary bladder and sweat from the skin

C. Harmful substances in the body are chemically changed

D. Substances of no further use or those present in excessive quantities are thrown out of the body

Answer: D

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58. Which of the following sets of animals produce the same substance as their chief excretory product?

A. Camel, housefly, and snake

B. Fish, pigeon, and frog

C. Amoeba, ant, and antelope

D. Frog, monkey, and dog

Answer: D

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59. Column of Bertini is found in

A. Liver

B. Kidney

C. Ovaries

D. Testes

Answer: B

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60. Which feature enables the mammalian kidney to concentrate urine in the medullary region?

A. Rapid removal of sodium ions from medullary tissues.

B. Maintaining a high osmotic pressure in the tissues between the tubules.

C. High oxidative metabolism of medullary cells.

D. Rapid flow of blood through the medulla.

Answer: B

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61. In the kidney of the rabbit, the loop of Henle is the part of

A. Collecting duct

B. Glomerulus

C. Uriniferous tubule

D. Bowman's capsule

Answer: C

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62. In the kidney , the formation of urine involve the following processes arranged as

A. Reabsorption, filtration, and secretion

B. Glomerular filtration, selective reabsorption, and tubular secretion

C. Filtration, secretion, and reabsorption

D. Secretion, absorption, and filtration

Answer: B

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63. A severe fall in blood pressure disturbs the function of kidneys and reduces

A. Reabsorption of useful substances

B. Glomerular filtration

C. Secretion of nitrogenous waste

D. Renal filtration

Answer: B

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64. In a glomerulus,

A. Afferent capillaries are thicker than efferent capillaries

B. Afferent arteriole is thicker than efferent arteriole

C. Afferent arteriole is thinner than efferent arteriole

D. Afferent capillaries are thinner than efferent capillaries

Answer: B

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65. High blood pressure is maintained in glomeruli than in other capillaries because

A. The variability of the diameters of arterioles causes higher resistance to blood flowing out of the glomeruli than that flowing out of the capillaries

B. Glomerulus has low hydrostatic pressure than capillary

C. Capillary has lesser diameter than glomerulus

D. All the above

Answer: A

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66. Ultrafiltration occurs in a glomerulus when

A. Osmotic pressure exceeds hydrostatic pressure

B. Hydrostatic pressure exceeds osmotic pressure

C. Colloidal osmotic pressure plus capsular pressure remain less than glomerular hydrostatic pressure

D. Capsular hydrostatic pressure exceeds glomerular hydrostatic pressure

Answer: C

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67. Workers in deep mines usually suffer from dehydration because

A. Water is lost due to defecation

B. Water is lost due to evaporation

C. Water is lost along with salts in the form of sweat

D. Water is lost in the form of urine

Answer: C

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68. Aquatic animals are mostly ammonotelic because

A. Excretion of ammonia requires large amount of water which is available to these animals

B. Ammonia helps in checking the inflow of water into body

C. They get lesser light

D. Water contains less nitrogen

Answer: A

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69. Aldosterone stimulates the reabsorption of

A. Keto acids

B. Glucose

C. K^+ ions

D. Na^+ ions

Answer: D

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70. Glomerular filtration rate would be decreased by

A. An increase in the renal blood flow

B. Compression of the renal capsule

C. An increase in the afferent arteriolar pressure

D. Constriction of the efferent arteriole

Answer: B

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71. In which part of excretory system of mammals can you first use the term "urine" for contained fluid?

A. Urinary bladder

B. Collecting tubule

C. Bowman's capsule

D. Loop of Henle

Answer: B

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72. In public urinals, the urine on standing gives a pungent smell, due to

or State urine smells like ammonia because of

A. Conversion of uric acid into ammonia by omithine cycle

B. Conversion of both urea and uric acid into ammonia

C. Conversion of urea into ammonia by bacteria

D. None of these

Answer: C

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73. A person who is not taking food or beverages will have _____in urine.

A. Less urea in his urine

B. Less fats in his urint

C. More glucose in his blood

D. More urea in his blood

Answer: A

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74. What is "renal threshold"?

A. The highest concentration of substances

up to which it is totally reabsorbed from

glomerular filtrate.

B. At which all the substances are reabsorbed.

C. At which the filtration of a substance starts.

D. At which no substance is filtered in the glomerulus

Answer: A

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75. The glomerular filtrate contains

A. Blood minus cells

B. Blood minus cell and proteins

C. Plasma minus cells and proteins

D. Blood minus proteins

Answer: B

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76. Which of the following terms refer to painful urination?

A. Enuresis

B. Dysuria

C. Anuria

D. Ketosis

Answer: B

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77. In diabetes mellitus the patient drink more water as there is urinary loss of

A. Protein

B. Salt

C. Insulin

D. Glucose

Answer: D

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78. A patient who excretes large quantity of sodium in urine has

A. Diseased adrenal cortex

B. Diseased adrenal medulla

C. Diseased parathyroid

D. Diseased thymus

Answer: A

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79. A kidney stone is

A. Deposition of sand in kidney

B. Blockage by fats

C. Blockage by proteins

D. A salt such as oxalate crystallized in pelvis

Answer: D

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80. Glycosuria is the term used for

A. Loss of glucose in the urine

B. Loss of blood in the urine

C. Loss of salts in the urine

D. None of these

Answer: A

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81. Malpighian corpuscles are present in

A. Cortex

B. Medulla

C. Germinal cells

D. None of them

Answer: A

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82. Difference between glomerular filtrate and plasma is of

A. Proteins

B. Potassium

C. First is white whereas later is yellow

D. First is yellow whereas later is white

Answer: A

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83. ADH controls water permeability of

A. Collecting tube (distal part)

B. Proximal convoluted tubule

C. Distal convoluted tubule (distal part)

D. All the above

Answer: C

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84. What will happen if the kidney is removed from the body of a human being

A. Death due to poisoning

B. Uremia and death

C. Stoppage of urination

D. Nothing, the person will survive and remain normal kidney will become hypertrophied.

Answer: D

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85. Total filtrate formed in 24 hours in human kidney is

A. 1.8 L

B. 8.0 L

C. 18 L

D. 180 L

Answer: D

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86. Ammonia is converted into urea in

A. Heart

B. Spleen

C. Liver

D. Brain

Answer: C

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87. Which vitamin is excreted out in high quantity through urine in man?

A. Vitamin C

B. Vitamin B

C. Vitamin E

D. Vitamin K

Answer: A

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88. If the afferent arteriole diameter is less than efferent arteriole than what happen ?

A. No effect

B. Ultrafiltration reaction is slow

C. Ultrafiltration is not possible.

D. Ultrafiltration will stop and tubular secretion will start.

Answer: C

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89. Correct order of excretory organs in Cockroach, Earthworm and Rabbit respectively

A. Skin, Malpighi tubules, kidney

B. Malpighi tubules, Nephridia, kidney

C. Nephridia, Malpighi tubules, kidney

D. Nephridia, kidney, green gland

Answer: B

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90. Which one of the following blood vessel in mammals contains least amount of urea :

A. Hepatic portal vein

B. Hepatic vein

C. Dorsal aorta

D. Renal vein

Answer: D

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91. Due to insufficient filtration in the Bowman's capsule , all are likely to happen except

A. Accumulation of fluid in the body

B. Increase in blood pressure

C. Increase in blood urea level

D. Loss of glucose through urine

Answer: D

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92. The appearance of alubumin in the urine is most likely due to :

A. Increase in the blood pressure

B. Decrease in the blood osmotic pressure

C. Damage to the Malpighian corpuscles

D. Damage to the proximal convoluted tubules

Answer: C

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93. Urinary excretion of Na is regulated by

A. Anterior pituitary

B. Posterior pituitary

C. Adrenal cortex

D. Adrenal medulla

Answer: C

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94. The yellow colour of urine of the vertebrates is due to

A. Cholesterol

B. Urochrome

C. Uric acid

D. Melanin

Answer: B

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95. Diuresis is a specific pathological condition which leads to

A. Increased volume of urine excretion

B. Decreased volume of urine excretion

C. Increased glucose excretion

D. Decreased electrolyte concentration

Answer: A

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96. Which one of the following pair of waste substances is removed from blood in omithine cycle

A. CO_2 and urea

B. Ammonia and urea

C. CO_2 and ammonia

D. Urea and sodium sail

Answer: C

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97. The term hematuria is used to describe

A. Internal bleeding

B. Blood in urine

C. Blood cancer

D. Blood poisoning

Answer: B

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98. In the kidney , the formation of urine involve the following processes arranged as

A. Glomerular filtration, reabsorption, and tubular secre- tion

B. Reabsorption, filtration, and secretion

C. Secretion, absorption, and filtration

D. Filtration, secretion, and reabsorption

Answer: A

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99. An advantage of excreting nitrogenous wastes in the form of uric acid is that

A. Uric acid can be excreted in almost solid form

B. Uric acid is the first metabolic breakdown products of acids

C. Uric acid is the second metabolic breakdown products of acids

D. Uric acid may be excreted through the lungs

Answer: A

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100. Which of the following is the characteristic of a metanephric kidney

A. Hypotonic urine production

B. Excess secretion of uric acid

C. Loop of Henle

D. Hormone production

Answer: C

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101. The hormone secreted.by kidney is

A. Gastrin

B. Secretin

C. Erythropoietin

D. Aldosterone

Answer: C

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102. Which of the following are uricotelic animals :

A. Rohu and frog

B. Lizard and crow

C. Camel and frog

D. Earthworm and eagle

Answer: B

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103. Marine teleosts, undergoing putrefaction, emit sharp characteristic foul odor, which is due to the production of

A. Trimethylamine

B. Hydrogen sulfide

C. Ammonia

D. Lactic Acid

Answer: A

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104. Fresh water bony fishes maintain water balance by

A. Excreting a hypotonic urine

B. Excreting salt across their gills

C. Drinking small amount of water

D. Excreting wastes in the form of uric acid

Answer: A

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105. Which is mismatched ,

A. Bowman's capsule-Glomerular filteration

B. PCT- Absorption of Na^+ and K^+

C. DCT- Absorption of glucose

D. None of these

Answer: C

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106. Loop of Henle is associated with : —

A. Excretory system

B. Respiratory system

C. Reproducitve system

D. Digestive system

Answer: A

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107. The complete reabsorption of glucose takes place in :

A. Collecting tubule

B. Distal tubule

C. Proximal convoluted tubule

D. Henle loop

Answer: C

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108. Which one of the following is metabolic waste of protein metabolism

A. NH_3, urea, and CO_2

B. Urea, oxygen, and N_2

C. Urea, ammonia, and alanine

D. Urea, ammonia, and creatinine

Answer: D

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109. Diuresis is a condition , which is characterized by

A. Increase in urine volume

B. Increased sugar excretion

C. Decrease in urine volume

D. Decrease in ionic balance

Answer: A

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110. Liquid which collects in the cavity of Bowman's capsule is

A. Blood plasma minus blood proteins

B. Glycogen and water

C. Urea, glycogen, and water

D. Urea

Answer: A

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111. Mammalian kidney resemble contractile vacuole of Amoeba in excretion of

A. Glucose

B. Excess water

C. Urea

D. Ammoriia

Answer: B

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112. ADH acts on

A. Collecting tubule of kidney

B. Loop of Henle

C. Collecting ducts of tests

D. None of the above

Answer: A

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113. Renin is secreted by

A. Cells of stomach

B. Cells of intestine

C. Cortical cells of kidney

D. Cells of juxtaglomerular apparatus of kidney

Answer: D

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114. Absorptin of Na^+ and K^+ ions does not occur in : —

A. Bowman's capsule

B. Loop of Henle

C. Distal convoluted tubule

D. Proximal convoluted tubule

Answer: A

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115. Urea synthesis takes place in

A. Urinary bladder

B. Alimentary canal

C. Liver

D. Kidney

Answer: C

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116. Glycosuria is the condition

A. In which a man eats more sugar

B. In which a man excretes sugar in urine

C. In which sugar is excreted in feces

D. In which a man has low sugar level in blood

Answer: B

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117. Select the incorrect statement regarding mechanism of urine formation in man.

A. Tubular secretion takes place in the PCT.

B. Aldosterone induces greater reabsorption of sodium.

C. The counter current systems contribute in diluting the urine.

D. The glomerular filtration rate is about 125 mL/min.

Answer: C

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118. When a litre of water is introduced in human blood

A. BMR increases

B. BMR decreases

C. RBC collapses and urine production increases

D. RBC collapses and urine production decreases

Answer: C

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119. In which of the following organisms, the excretory organs are correctly stated?

A. Human - Kidneys, sebaceous glands, and tear glands

B. Earthworm - Pharyngeal, integumentary, and septal nephridia

C. Cockroach - Malpighian tubules and enteric caeca

D. Frog - Kidneys, skin, and buccal epithelium

Answer: B

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120. Urea synthesis takes place primarily in liver because

A. Enzyme arginase is present in liver only.

B. NH_3 and CO_2 are present in liver only.

C. Hormone ADH is found in liver only.

D. Kidney is smaller than liver.

Answer: A

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121. The less amount of water is lost with the excretion of which nitrogenous product?

A. NH_3

B. NH_3 and uric acid

C. Urea and uric acid

D. NH_3 and urea

Answer: C

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122. Which of the following statements is false?

(i) Medulla is divided into about renal pyramids

(ii) Outer cortex and inner medulla are the two zones in kidney

(iii) Pyramid projects into ureter

(iv) Inwards extension of cortex between and pyramids is called renal column of Bertini

A. iii

B. ii and iv

C. i and iv

D. iv

Answer: A

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123. Which of the following statements is false?

A. Renal tubule starts with a double wailed like structure called Bowman's capsule

B. PCT is present in medulla part of kidney

C. In majority of nephrons, the loop of Henle is too short and such nephrons are cortical nephrons

D. Juxta medullary nephron has long loop of Henle

Answer: B

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124. Which of the following is incorrect about juxta medullary nephrons?

A. Vasa recta is prominent

B. Na^+ is returned to the interstitium by ascending limb of vasa recta

C. Water is returned in the ascending limb of Henle

D. Loop of Henle is long

Answer: C

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125. Tubular secretion helps to maintain a proper acid-base balance by removing one of the following from blood

A. NH_3 and creatinine

B. H^+ and urea

C. Uric acid

D. H^+ and NH_3

Answer: D

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126. In which of the following counter current operates

A. In descending limb of loop of Henle

B. In ascending limb or descending limb of vasa recta

C. Between the 2 limbs of Henle's loop and those of vasa recta

D. In ascending limb of loop of Henle

Answer: C

127. Human kidney can produce urine nearly how many times concentrated than the initial filtrate formed?

A. 2

B. 4

C. 10

D. 100

Answer: B

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128. The high osmolarity of the renal medulla is maintained by all of the following except

(i) Active transport of salt from the upper

region of the ascending limb

(ii) The spatial arrangement of juxta medullary nephrons

(iii) Diffusion of urea from the collecting duct

(iv)Diffusion of salt from the ascending limb of the loop of Henle

(v) Diffusion of salt from the descending limb of the loop of Henle

A. Only iv

B. Only v

C. ii and iii

D. iv and v

Answer: B

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129. Osmoreceptors in the body are activated by changes in

A. Blood volume, body fluid volume and ionic concentration

B. Blood volume and body fluid volume

C. Blood volume but not body fluid volume

D. Body fluid volume but not blood volume

Answer: A

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130. Which of the following sequence is correct?

(i) An increase in body fluid volume $\rightarrow$ switch off the osmoreceptors $\rightarrow$ suppresses the ADH Release

(ii) ADH $\rightarrow$ Constricting effect on blood vessel $\rightarrow$ B.P. high $\rightarrow$ Glomerular blood flow more $\rightarrow$ GFR more

(iii) Angiotensinogen $\rightarrow$ Angiotensin I $\rightarrow$ Angiotensin II $\rightarrow$ Adrenal cortex $\rightarrow$ Aldosterone

(iv) Angiotensin $\rightarrow$ ADH $\rightarrow$ GFR more $\rightarrow$ Aldosterone $\rightarrow$ B.P. high

A. i, ii and iii

B. i, ii and iv

C. ii, iii and iv

D. iii, iv and ii

Answer: A

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131. Which of the following is true about Atrial Natriuretic Factor (ANF)?

A. An increase in blood volume and B.P. stimulates cardiac atria to release ANF

B. ANF promotes vasoconstriction and thereby decrease B.P

C. ANF acts as a check on RAAS

D. 1 and3

Answer: D

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132. Which of the following statement is correct?

(i) Sweat is waxy protective secretion having

sterols, hydrocarbons and fatty acids

(ii) Sebum is an aqueous fluid having NaCl, lactic acid, urea, amino acids, glucose

(iii) The human skin posseses sweat and sebaceous glands which eliminate some wastes in their secretion.

A. Only iii

B. Only i

C. i and ii

D. i and iii

Answer: A

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133. Filtration slits are formed by

A. Endothelial lining of glomerular capillaries

B. Basement membrane

C. Inner epithelium of Bowman's capsule

D. The participation of all of these

Answer: C

Watch Video Solution

134. Go through the following statements.

(i) Liver is the site of urine formation.

(ii) Urethra is not the part of kidney.

(iii) Vasa recta is well developed in cortical nephrons.

(v) The highest concentration of urea is found in Hepatic vein.

(vi) Least concentration of urea is present in renal vein. How many statements are correct?

A. 0

B. 2

C. 3

D. 5

Answer: C

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135. Which of the following two compounds play main role in maintaining the osmolarity gradient in medulla?

A. $NaCl$ and H^+

B. K^+ and H^+

C. NaCl and urea

D. Ammonia and H^+

Answer: C

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136. The glomerular capillary blood pressure causes filtration of blood through three layers in a sequence of

A. Endothelium, Basement membrane. Epithelium of Bowman's capsule

B. Epithelium of Bowman's capsule, Basement mem- brane, Endothelium

C. Epithelium of Bowman's capsule, Endothelium, Basement membrane

D. Basement membrane, Endothelium, Epithelium of Bowman's capsule

Answer: A

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137. Which is true regarding rennin secretion?

A. Directly proportional to the ADH levels

B. Decreased Na^+ in DCT increases rennin secretion

C. Increased K^+ in PCT increases renin secretion

D. Inversely proportional to the potassium levels

Answer: B

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138. Macula densa cells get stimulated by

A. Decreased Na^+

B. Decreased K^+

C. Alteration in transmural pressure

D. Hypovolemia

Answer: A

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139. Juxta glomerular apparatus (JGA) comprises of all of the following except:

A. Macola densa cells

B. Juxta glomerular cells

C. Lacis cells

D. Principal cells

Answer: D

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140. Glomerular capillaries exhibit higher pressure than that in other body capillary bed because

A. There are two sets of capillaries in the kidney

B. Afferent arterioles are major site of autoregulatory resistance

C. Efferent arterioles have relatively high resistance

D. All of the above

Answer: B

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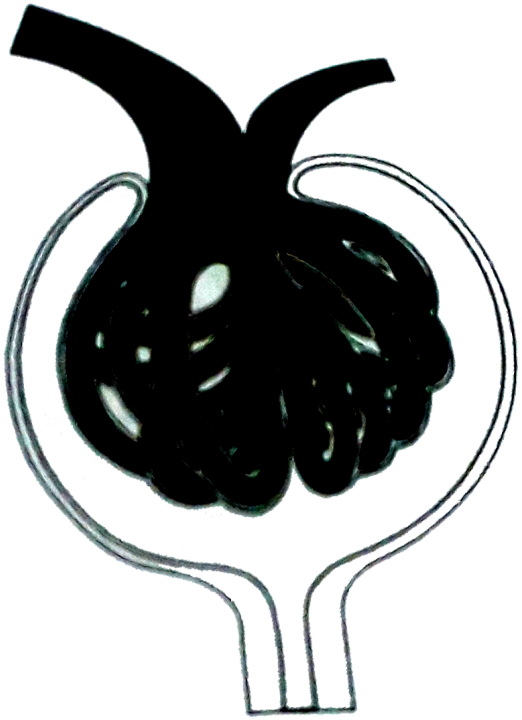
141. Which part ofrenal tubule is double walled?



A. Afferent arterioles

B. Efferent arterioles

C. Bowman's capsule

D. Proximal convoluted tubules

Answer: C

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142. In the diagram of excretory system of human beings given below, identify A to D structure.

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143. Identify A, B. C and Din Figure 19.15 respectively.

- Renal Pelvis-Medullary pyramid-Calyx-Cortex
- Cortex-Medullary pyramid-Calyx-Renal pelvis
- Cortex-Calyx-Medullary pyramid-Renal pelvis
- Cortex-Renal pelvis -Medullary pyramid-Calyx

Answer: B

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144. In given diagram (Fig. 19.16) which part maintains the concentration of medulary interstitium.

- A and B
- A and D
- C only
- D only

Answer: D

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145. Reabsorption of useful substances from glomerular filtrate occurs in

A. Collecting tube

B. Loop of Henle

C. Proximal convoluted tubule

D. Distal convoluted tubule

Answer: C

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146. Kidney crystals are solid clusters of

A. Calcium nitrate and uric acid

B. Phosphate and uric acid

C. Calcium carbonate and uric acid

D. Calcium metabisulphite and uric acid

Answer: B

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147. Brush border is characteristic of

A. Neck of nephron

B. Collecting tube

C. Proximal convoluted tubule

D. All the above

Answer: C

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148. Nitrogenous waste products are eliminated mainly as

A. Urea in tadpole and ammonia in adult frog

B. Ammonia in tadpole and urea in adult frog

C. Urea in both tadpole and adult frog

D. Urea in tadpole and uric acid in adult frog

Answer: B

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149. In rabbit and humans, the kidney is

A. Metanephric

B. Mesonephric

C. Pronephric

D. Opisthonephric

Answer: A

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150. Part not belonging to uriniferous tubule is

A. Glomerulus

B. Henle's loop

C. Distal convoluted tubule

D. Collecting duct

Answer: D

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151. Which one of the four parts mentioned below does not constitute a part of a single uriniferous tubule

A. Bowman's capsule

B. Distal convoluted tubule

C. Loop of Henle

D. Collecting duct

Answer: D

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152. A condition of failure of kidney to form urine is called

A. Deamination

B. Entropy

C. Anuria

D. None of these

Answer: C

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153. Which pair is correct?

A. Sweat-Temperature regulation

B. Saliva-Sense of food taste

C. Sebum-Sexual attraction

D. Humerus-Hind leg

Answer: A

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154. Concentration of urine depends upon which organ -

A. Bowman's capsule

B. Length of Henle's loop

C. PCT

D. Network of capillaries arising from glomerulus

Answer: B

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155. Conversion of ammonia to urea is done by . . .. Cycl -

A. Omithine cycle

B. Arginine cycle

C. Fumaric cycle

D. Citrulline cycle

Answer: A

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156. The movement of Ions against the concentration gradient will be -

A. Active transport

B. Osmosis

C. Diffusion

D. All of these

Answer: A

 Watch Video Solution

157. Water reabsorption in the distal parts of kidney tubules is regulated by

A. STH

B. TSH

C. ADH

D. MSH

Answer: C

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158. If Henle's loop were absent from mammalian nephron which of the following is to be expected

A. The urine will be more in volume.

B. There will be no urine formation.

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

D. The urine will be more concentrated.

Answer: A

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159. The net pressure gradient that causes the fluid to filter out of the glomeruli into the capsule is

A. 20 mm Hg

B. 50 mm Hg

C. 75 mm Hg

D. 30 mm Hg

Answer: A

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160. 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: A

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161. Ureters act as urinogenital ducts in

A. Male humans

B. Female humans

C. Both male and female frogs

D. Male frogs

Answer: D

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Assertion Reasoning Questions

1. Assertion: Pregnant women may show some presence of glucose in their postprandial urine although they have no diabetes.

Reason: In pregnant women the glomerular filtration rate is slightly increased. As a result the tubular load of glucose exceeds the tubular maximum for glucose reabsorption.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: A

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2. A: Atrial naturiuretic factor is released by wall of atria.

R: It inhibits the release of renin from juxta glomerular apparatus.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. lf both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: C

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3. A: Inner wall of Bowman's capsule is lined with specialized cells - podocytes having a number of projections

R: These projections increases the suface area from absorptions.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: C

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4. Assertion: Kidneys are retroperitoneal in position.

Reason: Kidneys are covered with peritoneum only on ventral surface.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct

explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: A

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5. Assertion: Uric acid is produced by the metabolism of purine and pyrimidine.

Reason: Uric acid has high toxicity and is soluble in water.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: D

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6. Assertion: Kidneys of the vertebrates are retroperitoneal and extracoelomic.

Reason: The structural and functional units of the kidneys are nephrons.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct

explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: B

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7. Assertion : The glomerular filtrate resembles the protein free plasma in composition and osmotic pressure .

Reason : The glomerular capillary wall and

inner membrane of Bowman's capsule are impermeable to large molecules .

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. lf both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: A

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8. Assertion: During micturition, urine is prevented from flowing back into the ureters.

Reason: Urethral sphincters contract during micturition

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: B

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9. Assertion : Kidneys maintain the osmotic concentration of the blood .

Reason : Kidneys eliminate either hypotonic or hypertonic urine according to the need of the body .

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct

explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: A

10. Assertion: ADH reduces chloride loss in Urine.

Reason: ADH decreases water absorption.

A. If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

B. If both Assertion and Reason are true, but the Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false

D. If both Assertion and Reason are false

Answer: D

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Archives

1. A person on long hunger strike and surviving only on water will have

A. Less urea in his urine

B. More sodium in his urine

C. Less amino acids in his urine

D. More glucose in his blood

Answer: A

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2. Glomerular hydrostatic hydrostatic pressure is present in

A. Tubule of kidney

B. Bowman's capsule

C. Glomerulus

D. Malpighian tubule

Answer: C

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3. Bowman's glands are located in the

A. Olfactory epithelium of our nose

B. Proximal end of uriniferous tubules

C. Anterior pituitary

D. Female reproductive system of cockroach

Answer: A

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4. Which are true about the following statements about kangaroo rats

(a) They have dark colour, high rate of reproduction and excrete solide urine

(b) They do not drink water, breathe at slow rate, and have their body covered with thick hair

(c) The feed on dry seeds and do not require

drinking water

(d) They excrete very concentrated urine and do not use water to regulate body temperature

A. (iii) and (i)

B. (i) and (ii)

C. (iii) and (iv)

D. (ii) and (iii)

Answer: A

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

A. There will be no micturition

B. Urine will continue to collect normally in bladder

C. Micturition will continue

D. Urine will not collect in the bladder

Answer: A

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6. Uric acid is the chief nitrogenous component of the excretory products of :

A. Frog

B. Man

C. Earthworm

D. Cockroach

Answer: D

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7. Which one of the following statements in regard to the excretion by the human kidneys is correct?

A. Descending limb of Loop of Henly is impermeable to water

B. Distal convoluted tubule is incapable in reabsorbing HCO_3

C. Nearly 99 percent of the glomerular filtrate is reabsorbed by the renal tube

D. Ascending limb of Loop of Henly is impermeable to electrolytes

Answer: C

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8. The principal nitrogenous exretory compound in humans is syntheised

A. in kidneys but eliminated mostly through liver

B. in kidneys as well as eliminated by kidneys

C. in liver and also eliminated by the same through bile

D. in the liver, but eliminated mostly through Kidneys

Answer: D

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9. Which one of the following statement is correct respect to kidney function regulation

A. During summer when body looses of lot of water by evaporation, the release of ADH is suppressed

B. When someone drinks lot of water, ADH release is suppressed

C. Exposure to cold temperature stimulates ADH release

D. An increase in glomerular blood flow stimulates formation of Angiotensin II.

Answer: B

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10. Which one of the following is a correct pair showing the function of a specific part of the human nephron?

A. Podocytes: Create minute spaces (slit pores) for the filtration of blood into the Bowman's capsule.

B. Henle's loop: Most reabsorption of the major substances from the glomerular filtrate.

C. Distal convoluted tubule: Reabsorption of K^+ ions into the surrounding blood capillaries.

D. Afferent arteriole: carries the blood away from the glomerular towards renal vein.

Answer: A

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11. Uricotelic mode of passing out nitrogenous wastes is found in

A. Reptiles and bird

B. Birds and annelids

C. Amphibians and reptiles

D. Insects and amphibians

Answer: A

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12. Reabsorption of useful substances back into the blood from the filtrate in a nephron occurs in

or In which part of kidney, Glucose and amino acids are reabsorbed

The maximum amount of electrolytes and water (70-80 Percent) from the glomerular filtrate is reabsorbed in which part of the nephron

A. Distal convoluted tubule

B. Proximal convoluted tubule

C. Descending limb of loop of Henle

D. Ascending limb of loop of Henle

Answer: B

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13. Which one of the folloowing options gives the correcct categorisation of animals according to the type of nitrogenous waste they give out?

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14. A fall in glomerular filtration rate (GFR) activates

A. Juxtaglomerular cells to release renin

B. Adrenal cortex to release aldosterone

C. Adrenal medulla to release adrenaline

D. Posterior pituitary to release vasopressin

Answer: A

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15. What is common between humans and adult Frog

A. Four-chambered heart

B. Internal fertilization

C. Nucleated RB Cs

D. Ureotelic mode of excretion

Answer: D

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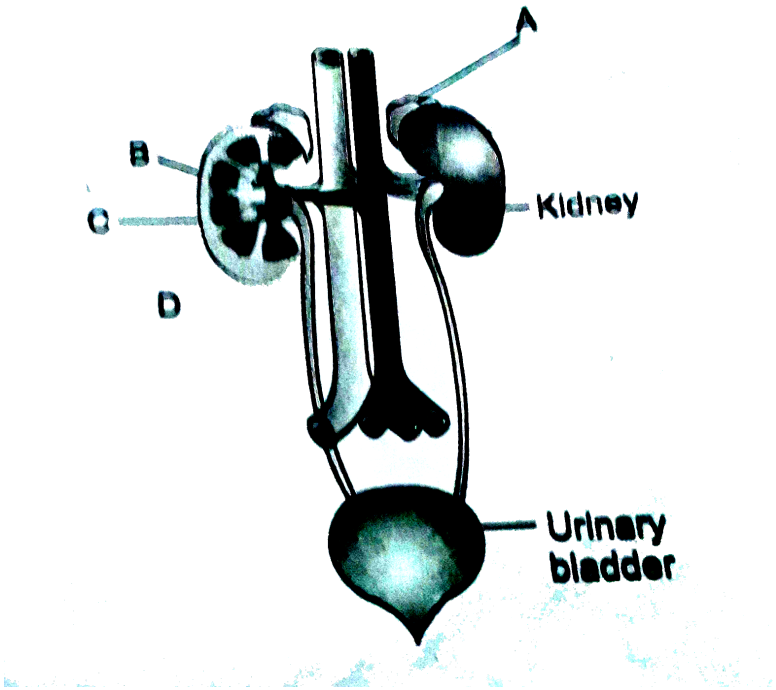
16. Figure 19 .1 7 shows human urinary system with structures labeled A-D. Select the option which correctly identifies them and gives their

characteristics and/or functions.



A. B $\rightarrow$ Pelvis $\rightarrow$ Broad, funnel-shaped space inner to hilum, directly connected to the loop of Henle.

B. C $\rightarrow$ Medulla $\rightarrow$ The inner zone of kidney and con- tains complete nephrons.

C. D $\rightarrow$ Cortex $\rightarrow$ The outer part of kidney and does not contain any part of nephrons.

D. A $\rightarrow$ Adrenal gland $\rightarrow$ Located at the anterior part of kidney. Secretes catecholamine which stimulates glycogen breakdown.

Answer: D

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17. Which of the following causes an increase in sodium reabsorption in the distal convoluted tubule

A. Increase in aldosterone levels

B. Decrease in antidiuretic hormone levels

C. Decrease in aldosterone levels

D. Decrease in antidiuretic hormone levels

Answer: A

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18. Removal of proximal convoluted tubule from the nephron will be result in

A. No urine formation

B. More diluted urine

C. More concentrated urine

D. No change in quality and quantity of urine

Answer: B

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19. Which of the following does not favour the formation of large quantities of dilute urine

A. Atrial-natriuretic factor

B. Alcohol

C. Caffeine

D. Renin

Answer: D

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20. Human urine is usually acidic because

A. hydrogen ions are actively secreted into the filtrate

B. the sodium transporter exchanges one hydrogen ion for each sodium ion, in peritubular capillaries

C. excreted plasma proteins are acidic

D. potassium and sodium exchange generates acidity

Answer: A

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21. In mammals, which blood vessel would normally carry largest amount of urea?

A. Renal Vein

B. Dorsal Aorta

C. Hepatic Vein

D. Hepatic Portal Vein

Answer: C

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22. The part of nephron involved in active reabsorption of sodium is

A. Bowman's capsule

B. Descending limb of Henle's loop

C. Distal convoluted tubule

D. Proximal convoluted tubule

Answer: D

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