BIOLOGY

BOTANY AND ZOOLOGY FOR NEET AND AIIMS

EXCRETORY PRODUCTS AND THEIR ELIMINATION

Exercise I Excretory Products And Excretory Organs

1. Highly toxic form of excretory product is

A. ammonia

B. urea

C. uric acid

D. carbon dioxide

Answer: A

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2. Protonephridia of flatworms are primarily concerned with

A. ionic and fluid volume regulation

B. excretion of ammonium ions with their excretory organs

C. egestion of undigested waste

D. expulsion of gametes during copulation

Answer: A

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3. To minimize the loss of water from the body the suitable condition is

A. Ammonotelism

B. Ureotelism

C. Uricotelism

D. Both (1) and (2)

Answer: C

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4. 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. The formation of uric acid requires a great deal of energy

C. Uric acid is the first metabolic breakdown product

D. Uric acid may be excreted through the lungs

Answer: A

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5. Ammonia is the main nitrogenous excretory material in

A. Amphibians

B. Aves

C. fresh water fishes

D. Reptiles

Answer: C

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6. Animals which excrete large amount of ammonia are

A. Terrestrial

B. Amphibians

C. Egg Laying

D. Aquatic

Answer: D

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7. Uric acid is nitrogenous waste in

A. Mammals and molluses

B. Birds and lizards

C. Frog and cartilaginous fishes

D. Insects and bony fishes

Answer: B

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8. Excretion in the from of uric acid and urates in birds is helpful in

A. Conserving body heat

B. Eliminating excess water

C. Conserving body water

D. Eliminating body water

Answer: C

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9. Which one of following is the simplest excretory structure ?

A. Alveoli

B. Flame cells

C. Nephridia

D. Kidney

Answer: B

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10. Elimination of which substance requires large amount of water ?

A. Urea

B. Creatinine

C. Ammonia

D. Uric acid

Answer: C

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11. Which of the following are ammonotelic?

A. Terrestrial amphibians

B. Land snails

C. Marine fishes

D. Aquatic insects

Answer: D

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12. In some animals desired osmolarity is maintained in the kidney matrix by retaining

A. creatinine

B. urea

C. ammonia

D. uric acid

Answer: B

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13. Excretory structures of rotifers

A. renette glands

B. solenocytes

C. flame cells

D. nephridia

Answer: C

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14. The following substances are the excretory products in animals. Choose the least toxic from among them.

A. Urea

B. Uric acid

C. Ammonia

D. Carbon dioxide

Answer: B

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15. Which one of the following statements is incorrect?

A. Birds and land snails are uricotelic animals

B. Mammals and frogs are ureotelic animals

C. Aquatic amphibians and aquatic insects are ammonotelic animals

D. Birds and reptiles are ureotelic

Answer: D

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16. Which of the following pairs is wrong

A. Uricotelic - birds

B. Ureotelic - insects

C. Ammonotelic - Tadpole

D. Ureotelic - Elephant

Answer: B

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Exercise I Human Excretory System

1. Part of human kidney that has projections called calyces is

A. hilum

B. renal capsule

C. cortex

D. renal pelvis

Answer: D

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2. Columns of Bertini are present between

A. renal cortex and medulla

B. Bowman's capsules

C. renal pyramids

D. kidney and urinary bladder

Answer: C

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3. Glomerulus in kidney is formed by

A. renal artery and renal vein

B. afferent arteriole and renal venule

C. efferent arteriole and renal portal vein

D. afferent renal arteriole

Answer: D

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4. Medullary nephrons are

A. without Henle loop

B. without vasa recta

C. with long Henle loop

D. with less blood supply

Answer: C

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5. Vasa recta run parallel to

A. PCT

B. DCT

C. loop of Henle

D. all of these

Answer: C

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6. In Bowman's capsule

A. afferent arteriole is narrower whereas efferent arteriole is wider

B. afferent arteriole is wider whereas efferent arteriole is narrow

C. afferent capillary is wider and efferent capillary is narrow

D. afferent capillary is narrow and efferent capillary is wide

Answer: B

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7. Through the hilum of a kidney these emerge out

A. renal artery and ureter

B. renal vein and ureter

C. nerve and renal artery

D. renal artery and renal vein

Answer: B

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8. Juxtamedullary nephrons are much efficient in reabsorption of components because

A. they are found adjacent area of cortex with medulla

B. they have larger Bowman's capsules

C. they have long loop of Henle and well developed vasa recta

D. they are present in desert animals only

Answer: C

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9. Vasa recta is the continuation of

A. afferent arteriole

B. efferent arteriole

C. renal vein

D. renal nerve

Answer: B

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10. Which of the following are found in cortical region of kidney of mammals?

A. PCT and DCT

B. PCT and loop of Henle

C. Loop of Henle and collecting duct

D. DCT and loop of Henle

Answer: A

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11. In human kidney, the blood vessel which is not a portal vein but starts with blood capillaries and end with blood capillaries is

A. afferent arteriole

B. renal vein

C. renal artery

D. efferent arteriole

Answer: D

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12. In humans, kidneys are located between the levels of

A. last cervical and 3rd thoracic vertebrae

B. last thoracic and 3rd lumbar vertebrae

C. last lumbar and 3rd sacral vertebrae

D. 3rd thoracic and last lumbar vertebrae

Answer: B

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13. Broad funnel shaped space in the kidney, inner to hilum is

A. renal column

B. renal pelvis

C. renal calyx

D. renal sinus

Answer: B

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14. Cortical extensions between the medullary pyramids of the kidney are called

A. columns of Bertini

B. ducts of Bellini

C. renal calyces

D. renal pyramids

Answer: A

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15. Which of the following is located in the medulla of the kidney?

A. Malpighian body

B. PCT

C. Henle's loop

D. DCT

Answer: C

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16. Majority of the nephrons in the human kidney are

A. Juxta medullary - with long loop of Henle

B. Juxta medullary - with short loop of Henle

C. Cortical - with long loop of Henle

D. Cortical - with short loop of Henle

Answer: D

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17. Which one of the following statement 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 along with Bowman's capsule is called the renal corpuscle

D. Renal corpuscle, proximal convoluted tubule (PCT) and distal convoluted tubule (DCT) of the nephron'are situated in the cortical region of kidney

Answer: B

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Exercise I Urine Formation

1. 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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2. The glomerular capillary blood pressure causes filtration of blood through

A. 2 layers

B. 1 layer

C. 3 layers

D. 5 layers

Answer: C

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3. Which of the following occur in epithelium of Bowman's capsule?

A. Nephrocytes

B. Podocytes

C. Neural cells

D. Protonephridia

Answer: B

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4. Materials that are not filtered in Bowman's capsule are

A. simple sugars

B. water

C. amino acids

D. proteins

Answer: D

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5. On their activation JG cells secrete

A. erythropoietin

B. carbonic anhydrase

C. renin

D. angiotensin

Answer: C

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6. JG cells get activated when there is

A. more GFR

B. normal GFR

C. fall in GFR

D. both (1) and (3)

Answer: C

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7. Filtration of blood takes place at

A. Proximal convoluted tubules

B. Distal convoluted tubules

C. Malpighian body

D. collecting ducts

Answer: C

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8. In kidney ultrafiltration occurs due to

A. osmotic concentration

B. glomerular hydrostatic pressure

C. deoxygenated blood

D. exocytosis

Answer: B

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9. Glomerular filtrate contains

A. all the constituents of plasma

B. all the constituents of blood

C. similar to the features of serum

D. all the constituents of plasma excluding larger proteins

Answer: D

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10. Glomerular filtration per minute is equal to

A. 1/2 of blood pumped by each ventricle per minute

B. 1/5 of blood pumped by each ventricle per beat

C. 1/2 of blood pumped by each ventricle per beat

D. 1/5 of blood pumped by each ventricle per minute

Answer: D

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11. The movement of ions against the concentration gradient will be

A. Active transport

B. Osmosis

C. Diffusion

D. All

Answer: A

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12. Volume of the blood filtered by the kidneys per minute is

A. 180ml

B. 125ml

C. 1100-1200ml

D. 5000ml

Answer: C

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13. Filtration slits are formed by

A. endothelium of glomerular capillaries

B. podocytes of glomerular capillaries

C. podocytes of Bowman's capsule

D. podocytes of renal capsule

Answer: C

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14. Amount of filtrate formed by kidneys per minute is approximately

A. 125ml/min

B. 180 ml/min

C. 1100-1200 ml/min

D. 1500 ml/min

Answer: A

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Exercise I Function Of The Tubules

1. The ascending limb of loop of Henle is

A. permeable to water but not for electrolytes

B. permeable to both water and electrolytes

C. permeable to electrolytes but not for water

D. impermeable for both electrolytes and water

Answer: C

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2. The concentration of filtrate will _____ as it moves down in the descending limb of loop of Henle

A. increase

B. decrease

C. remain unchanged

D. first increase and then decrease

Answer: A

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3. From this part urea can be reabsorbed into interstitium to maintain osmolarity of that region

A. PCT

B. DCT

C. loop of Henle

D. collecting duct

Answer: D

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4. Urine becomes more and more hypertonic as it passes through

A. descending limb of loop of Henle

B. proximal convoluted tubule

C. ascending limb of loop of Henle

D. distal convoluted tubule

Answer: A

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5. Major portion of glomerular filtrate is reabsorbed in

A. proximal convoluted tubule

B. distal convoluted tubule

C. ascending limb of loop of Henle

D. descending limb of loop of Henle

Answer: A

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6. Essential nutrients like glucose, amino acids and vitamins reabsorbed in

A. DCT

B. PCT

C. Loop of Henle

D. Collecting duct

Answer: B

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7. Under normal conditions which one is completely reabsorbed in the renal tubule?

A. urea

B. uric acid

C. glucose

D. creatinine

Answer: C

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8. Which one is impermeable to reabsorption of electrolytes in nephron?

A. proximal convoluted tubule

B. distal convoluted tubule

C. ascending limb of loop of Henle

D. descending limb of loop of Henle

Answer: D

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9. Maintenance of pH and ionic balance of blood takes place by the selective secretion of certain ions takes place in

A. PCT

B. DCT

C. Collecting duct

D. All the above

Answer: D

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10. Identify the correct statement from the following

A. 70-80% of electrolytes and water are reabsorbed in PCT

B. Volume of the glomerular filtrate is 180 liters

C. Volume of urine per day is 1.5 liters

D. All the above

Answer: D

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11. Which of the following is incorrect?

A. Primary urine is hypotonic to cortical fluid

B. Urine in CD is hypertonic to plasma of blood

C. Urine in CD is hypertonic to medullary fluid

D. Urine in CD is equal to the concentration of medullary fluid

Answer: C

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12. Which is mismatched.

A. Bowman's capsule - Glomerular filtration

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

C. DCT - Absorption of glucose

D. None of these

Answer: C

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13. Absorption 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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14. Renal fluid present in the part of renal tubule which is impermeable to water but permeable to salts is

A. Hypertonic to the medullary fluid

B. Hypotonic to the medullary fluid

C. Isotonic to the cortical fluid

D. Hypertonic to blood and isotonic to the cortical fluid

Answer: B

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15. During formation of urine NaCl is returned to the medullary interstitium from the

A. Ascending limb of Henle's loop

B. Descending portion of the vasa recta

C. Ascending portion of the vasa recta

D. Descending limb of Henle's loop

Answer: C

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16. Which process plays important role in maintenance of ionic and acid base balance of body fluids

A. ultrafiltration

B. tubular secretion

C. reabsorption

D. glomerular filtration

Answer: B

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Exercise I Mechanism Of Concentration Of The Filtrate

1. Counter current mechanism observed in the renal medulla helps in formation of

A. concentrated urine

B. dilute urine

C. reabsorption of nutrients

D. reabsorption of creatinine

Answer: A

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2. Statement (A): Humans have the ability to produce concentrated urine.

Statement (B) : Majority of the nephrons in the human kidney have very long loops of

Henle and well-developed vasa recta which are involved in countercurrent mechanism.

A. Both A and B are correct

B. Both A and B are false

C. A is true, but B is false

D. A is false, but B is true

Answer: C

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3. Loop of Henle plays a significant role in the maintenance of

A. low osmolarity in medullary interstitial fluid

B. high osmolarity in cortical interstitial fluid

C. low osmolarity in cortical interstitial fluid

D. high osmolarity in medullary interstitial fluid

Answer: D

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4. Osmolarity close to cortex is 300 mOsmol/L and 1200 mOsmol/L in the inner medulla, the gradient mainly caused by

A. bicarbonates and glucose

B. glucose and amino acids

C. NaCl and urea

D. NaCl only

Answer: C

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5. Human urine as compared to human blood is normally

A. Hypotonic

B. Hypertonic

C. Isotonic

D. All of these

Answer: B

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6. We can produce concentrated/dilute urine, This is facilitated by a special mechanism. Identify the mechanism

A. Reabsorption from PCT

B. Reabsorption from collecting Duct

C. Reabsorption/Secretion in DCT

D. Counter current mechanism in Henle's loop/Vasa recta

Answer: D

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Exercise I Regulation Of Kidney Function

1. Hormone released by hypothalamus, which is related with the functioning of kidney is

A. renin

B. ANF

C. vasopressin

D. angiotensin

Answer: C

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2. Angiotensin II is

A. a vasoconstrictor

B. a vasodilator

C. activating adrenal medulla

D. decreasing GFR

Answer: A

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3. Atrial Natriurctic Factor (ANF)

A. causes vasodilation

B. increases blood pressure

C. decreases GFR

D. activates renin

Answer: A

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4. Statement (A): Atrial natriuretic peptide (ANP) mechanism acts as a counter check on the RAAS (Renin-Angiotensin-Aldosterone system).

Statement (B) : ANP causes contraction of vascular smooth muscles.

A. Both A and B are correct

B. Both A and B are false

C. A is true, but B is false

D. A is false, but B is true

Answer: C

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5. Which of the following statement is correct?

A. ANF and renin-angiotensin mechanism are similar in their function

B. ADH and ANF are vasodilators

C. Vasopressin prevents more loss of water through urine

D. JGA releases renin when gromerular blood pressure increases

Answer: C

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6. Enzyme released from kidney is

A. renin

B. uricase

C. pepsin

D. none of these

Answer: A

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7. Read the following

Angiotensinogen $\xrightarrow{A}$ Angiotensin - I $\xrightarrow{B}$ Angiotensin- II $\xrightarrow{C}$ Aldosterone Identify A, B and C

A. A-Renin, B-Angiotensin converting enzyme and C-Adrenal medulla

B. A-Renin, B-Angiotensin converting enzyme and C-Adrenal cortex

C. A-Angiotensin converting enzyme, B-Renin and C-Adrenal medulla

D. A-Angiotensin converting enzyme, B-Renin and C-Adrenal cortex

Answer: B

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8. Role of Angiotensin II is

A. Decreases the GFR

B. Enhances reabsorption of Na^+

C. Stimulates the secretion of ANP

D. Decreases BP

Answer: B

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9. Increase in body fluid volume

A. 1. activates the osmioreceptors

B. 2. suppresses release of ADH

C. 3. increases ADH secretion

D. 4, prevents diuresis

Answer: B

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

A. Oxytocin

B. Vasopressin

C. Adrenaline

D. Calcitonin

Answer: B

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Exercise I Micturition

1. Micturition occurs due to

A. contraction of bladder muscles

B. contraction of urethral sphincter

C. relaxation of urethral sphincter

D. Both (1) and (3)

Answer: D

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2. Amount of urea excreted out per day is

A. 1 - 1.5 lt

B. 25-30 gm

C. 180 It

D. 10-15 gm

Answer: B

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3. Urine of a diabetes mellitus patient consists of

A. no glucose

B. glucose

C. ketone bodies

D. both (2) and (3)

Answer: D

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4. The pH of urine is approximately

A. 6.5

B. 7

C. 6

D. 7.5

Answer: C

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Exercise I Role Of Other Organs In Excretion

1. Sweat glands help in elimination of

A. NaCl

B. Urea

C. Lactic acid

D. All the above

Answer: D

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2. Substances eliminated along with sebum

A. hydrocarbons

B. sterols

C. waxes

D. all the above

Answer: D

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

A. CO_2only

B. H_2Oonly

C. CO_2 and H_2O

D. ammonia

Answer: C

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4. Sweating is mainly meant for

A. removal of excess salt

B. regulation of body temperature

C. killing of skin bacteria

D. removal of excess water

Answer: B

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5. Lactic acid is excreted by

A. sebaceous glands

B. sudoriferous glands

C. liver

D. kidneys

Answer: B

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Exercise I Disorders Of The Excretory System

1. Haemoodialysis is helpful for the patients who are suffering from

A. diabetes insipidus

B. uremia

C. glomerulonephritis

D. diabetes mellitus

Answer: B

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2. Formation of insoluble mass of crystallised salts in the kidney is

A. glomeulonephritis

B. uremia

C. renal calculi

D. renal failure

Answer: C

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3. Dialysis fluid consists of all the constituents as in plasma except

A. water

B. amino acids

C. nitrogenous wastes

D. sugars

Answer: C

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4. The condition of accumulation of urea in blood is termed as

A. renal calculi

B. glomerulonephritis

C. uremia

D. ketonuria

Answer: C

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5. Dialysing unit (artificial kidney) contains fluid which is almost same as that of plasma except that it has

A. high glucose

B. no urea

C. high urea

D. high uric acid

Answer: B

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6. Statement (A): In heamodialysis nitrogenous wastes like urea, uricacid and creatinine, move freely out into dialysate.

Statement (B) : The cellophane membrane allows the passage of molecules, along the concentration gradient.

A. Both A and B are correct

B. Both A and B are false

C. A is true, but B is false

D. A is false, but B is true

Answer: A

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7. After the process of dialysis, the cleared blood is pumped back to the body through a vein by adding this

A. anti-heparin

B. heparin

C. dialyzing fluid

D. nitrogenous wastes

Answer: A

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Exercise Ii Excretory Products And Excretory Organs

1. Choose the correct statements

A) Uric acid is converted into allantoin by the action of uricase enzyme, in humans

B) Most of the ammonia is lost as ammonium ions across the epithelium of gills, in bony

fishes

C) Trimethylamine oxide protects body proteins from the damaging effect of uric acid in cartilaginous fishes

A. A, B only

B. B, C only

C. A, C only

D. All

Answer: B

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2. Nitrogenous waste products are eliminated mainly as

A. Urea in tadpole & ammonia in adult frog

B. Ammonia in tadpole and urea in adult frog

C. Urea in both tadpole & adult frog

D. Urea in tadpole and uric acid in adult frog

Answer: B

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3. In ornithine cycle, enzyme arginase breaks down arginine into

A. Citrulline and ammonia

B. Ornithine and ammonia

C. Ornithine and urea

D. Citrulline and urea

Answer: C

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4. Trimethylamine is the excretory product in

A. Marine teleosts

B. Fresh water fishes

C. Terrestrial Molluscs

D. Amphibians

Answer: A

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5. Urea is derived from

A. Facts

B. Amino acids

C. Carbohydrates

D. Uric acid

Answer: B

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6. Ornithine cycle operates in

A. Stomach

B. Pancreas

C. Liver

D. Oral cavity

Answer: C

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7. Physiologically urea is produced by the action of an enzyme

A. Uricase

B. Urease

C. Arginase

D. None

Answer: C

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8. Identify the correct matching pair

A. fish - uricotelic

B. man - ureotelic

C. bird - ammonotelic

D. frog - uricotelic

Answer: B

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9. Correct order of excretory organs in cockroach, earthworn and rabbit respectively

A. Skin, Malpighian tubules, kidneys

B. Malpighian tubules, nephridia, kidneys

C. Nephridia, Malpighian tubules, kidneys

D. Nephridia, kidneys, green glands

Answer: B

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10. Which one of the following pair of waste substances is removed from blood in ornithine cycle?

A. CO_2 and urea

B. Ammonia and urea

C. CO_2 and ammonia

D. Urea and sodium salt

Answer: C

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11. The presence of arginase confirms that

A. Arginine is synthesised

B. Ammonia is formed

C. Arginine is being converted into ornithine

D. Arginine is being converted into citrulline

Answer: C

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

A. Glucose

B. Excess water

C. Urea

D. Ammonia

Answer: B

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13. In man purine metabolism results in the formation of

A. Urea

B. Uric acid

C. Ammonia

D. Allantoin

Answer: B

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14. Metanephridia, Malpighian tubules and antennal glands are the excretory organs of the following respectively

A. Hydras, sponges and planarians

B. Prawns, cockroaches and crabs

C. Earthworms, insects and prawns

D. Starfishes, cyclostomes and bony fishes

Answer: C

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15. Earthworms are:

A. Ureotelic when plenty of water is available

B. Uricotelic when plenty of water is available

C. Uricotelic under conditions of water scarcity

D. Ammonotelic when plenty of water is available

Answer: D

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Exercise Ii Human Excretory System

1. The functional adult kidney of human being is

A. archinephros

B. pronephros

C. mesonephros

D. Metanephros

Answer: D

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2. Which blood vessel contains the least amount of urea?

A. Hepatic vein

B. Renal vein

C. Hepatic portal vein

D. Renal artery

Answer: B

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3. The afferent and efferent vessels in kidney are

A. Arterial in nature

B. Venous in nature

C. One is arterial and the other is venous

D. None of the above

Answer: A

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4. All the Bowman's capsules of the kidney are found in

A. Pelvis

B. Medulla

C. Cortex

D. None

Answer: C

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5. Complete loop of Henle is found in

A. Amphibia

B. Reptilia

C. Birds

D. Mammals

Answer: D

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6. Which of the following is not a function of kidneys?

A. Regulation of blood pressure

B. Removal of urea

C. Regulation of acidity of fluids

D. Secretion of antibiotics

Answer: D

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7. Which type of kidneys are found in amphibians?

A. Holonephric

B. Mesonephric

C. Pronephric

D. Metanephric

Answer: B

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Exercise Ii Urine Formation

1. One is found in blood not in nephric filtrate

A. Urea

B. Glucose

C. Amino acids

D. Globulin

Answer: D

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2. The effective filtration pressure in uriniferous tubule is

A. 75 mm Hg

B. 10 mm Hg

C. 100 mm Hg

D. 125 mm Hg

Answer: B

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3. Which fraction of blood changes after circulation through kidney?

A. Urea and uric acid

B. Urea and proteins

C. Urea and glucose

D. Glucose and proteins

Answer: A

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4. Changeable threshold material in Renal tubules

A. Water and Glucose

B. Urea and uric acid

C. Glucose and amino acids

D. Water and salts

Answer: D

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5. 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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Exercise Ii Function Of The Tubules

1. Route of tubular secretion is

A. Blood $\rightarrow$ Interstitial fluid $\rightarrow$ Renal fluid

B. Renal fluid $\rightarrow$ Interstitial fluid $\rightarrow$ Blood

C. Blood $\rightarrow$ Renal fluid $\rightarrow$ Interstitial fluid

D. Interstitial fluid $\rightarrow$ Renal fluid $\rightarrow$ Blood

Answer: A

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2. Which of the following statement is correct pertaining to the functioning of nephron?

A. Conditional reabsorption of water takes place in proximal convoluted tubule

B. Concentrated filtrate when passes upward in ascending limb of loop of Henle dilutes due to passage of electrolytes into medullary fluid

C. More glucose is reabsorbed in distal convoluted tubule

D. There is no hormonal influence on the reabsorption of filtration load in collecting duct

Answer: B

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3. The event that occurs at the site where the reabsorption of urea from renal fluid takes place is

A. Mandatory reabsorption of NaCl

B. Secretion of K^+ and H^+ ions

C. Conditional reabsorption of K^+ and glucose

D. Obligatory reabsorption of water and glucose

Answer: B

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4. Osmolarity of which of the following would be the highest?

A. Renal fluid in the terminal section of the proximal convoluted tubule

B. Blood in the glomerular capillaries

C. Renal fluid in the initial section of the distal convoluted tubule

D. Renal fluid at the hair pin turn of the loop of Henle

Answer: D

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5. 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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Exercise Ii Mechanism Of Concentration Of The Filtrate

1. Concentration of urine depends upon

A. Bowman's capsule

B. length of Henle's loop

C. P.C.T

D. network of capillaries arising from glomerulus

Answer: B

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2. Counter current exchange occurs in

A. PCT

B. DCT

C. Vasa recta

D. Loop of Henle

Answer: C

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Exercise Ii Regulation Of Kidney Function

1. Which of the following regulates reabsorption of salts from glomerular filtrate?

A. Oxytocin

B. Vasopressin

C. Glucocorticoids

D. Mineralocorticoids

Answer: D

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2. 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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3. The hormone secreted by kidney is

A. Gastrin

B. Renin

C. Erythropoietin

D. Aldosterone

Answer: C

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Exercise Ii Micturition

1. 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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Exercise Ii Role Of Other Organs In Excretion

1. Workers in deep mines usually suffer from dehydration because

A. Water is lost due to evaporation

B. Water is lost due to defaecation

C. Water is lost in the form of urine

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

Answer: D

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2. Why do we pass more urine in wet and cold season?

A. Impairment of water absorption by nephrons

B. Kidney becomes more active

C. Sweating is much decreased

D. ADH secretion is increased

Answer: C

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Exercise Ii Disorders Of The Excretory System

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

A. Creatinine

B. Haematuria

C. Anuria

D. Ketonuria

Answer: C

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2. Presence of RBC in urine is called 1

A. Anuria

B. Haematuria

C. Glycosuria

D. Ketonuria

Answer: B

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3. Urine of a person who takes a protein-deficient diet will have

A. Little glucose

B. Less urea

C. Excess urea

D. Little fat

Answer: B

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4. Urine of a human being suffering from diabetes insipidus is

A. Tasteless and thick

B. Sweet and thick

C. Tasteless and watery

D. Sweet and watery

Answer: C

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5. A person is undergoing prolonged fasting. His urine will be found to contain abnormal quantities of:

A. Fats

B. Amino acids

C. Ketones

D. Glucose

Answer: C

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6. What will happen if one kidney is removed from the body of a human being?

A. Death due to poisoning

B. Ureamia 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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7. In diabetes mellitus the patient drinks more water as there is urinary loss of

A. Salt

B. Insulin

C. Protein

D. Glucose

Answer: D

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8. If kidneys fail to reabsorb water, the effect on tissue would

A. Remain unaffected

B. Shrink and shrivel

C. Absorb water from blood plama

D. Take more O_2 from blood

Answer: B

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9. Ketonuria is

A. Albumin in urine

B. Globulin in urine

C. Ketone bodies in urine

D. None of the above

Answer: C

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10. Study the following statements.

A) Glucose is a higb threshold substance. B) Urine is concentrated in Henle's loop C) Haemodialysis removes urea, uric acid, glucose

and water. D) Plasma proteins are filtered out

Correct ones of the above are

A. A, C, D

B. B, C, D

C. A, B

D. A, C

Answer: C

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Exercise Iii Previous Aipmt Neet Questions

1. 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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2. 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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3. 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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4. Removal of proximal convoluted tubule from the nephron will 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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5. 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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6. Which of the following causes an increase in sodium reabsorption in 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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7. Which one of the following characteristics is common both in humans and adult frogs?

A. Internal fertilization

B. Nucleated RBCs

C. Ureotelic mode of excretion

D. Four-chambered heart

Answer: C

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8. A fall in glomerular filtration rate (GFR) activates :

A. Adrenal cortex to release aldosterone

B. Adrenal medulla to release adrenaline

C. Posterior pituitary to release vasopressin

D. Juxtaglomerular cells to release renin

Answer: D

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9. The maximum amount of electrolytes and water (70-80 percent) form the glomerular

filtrate is reabsorbed in which part of the nephron

A. Proximal convoluted tubule

B. Descending limb of loop of Henle

C. Ascending limb of loop of Henle

D. Distal convoluted tubule

Answer: A

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10. Uricotelic mode of passing out nitrogenous wastes is found in:

A. Insects and Amphibians

B. Reptiles and Birds

C. Birds and Annelids

D. Amphibians and Reptiles

Answer: B

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11. Which one of the following statement is correct with respect to kidney function regulation?

A. During summer when body loses 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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12. Which one of the following correctly explains the function of a specific part of a human nephron?

A. Afferent arteriole: carries the blood away from the glomerulus towards renal vein

B. Podocytes: Create minute spaces (slitpores) for the filtration of blood into the Bowman's capsule

C. Henle's loop: most reabsorption of the major substances from the glomerular filtrate

D. Distal convoluted tubule: reabsorption of K^+ ions into the surrounding blood

capillaries

Answer: B

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

A. Descending limb of loop of Henle is impermeable to water

B. Distal convoluted tubules 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 Henle is impermeable to electrolytes

Answer: C

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14. The principal nitrogenous excretory compound in humans is synthesised

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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15. 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: C

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16. 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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17. Consider the following four statements (i)-(iv) about certain desert animals such as kangaroo rat.

i) They have dark colour and high rate of reproduction and excrete solid urine ii) They do not drink water, breathe at a slow rate to conserve water and have their body covered with thick hairs iii) They feed on dry seeds and do not required drinking water iv)They excrete very concentrated urine and do not use water to regulate body temperature. Out of these four, which two are correct :

A. (iii) and (i)

B. (i) and (ii)

C. (iii) and (iv)

D. (ii) and (iii)

Answer: C

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18. A person who is on a long hunger strike and is 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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