



BIOLOGY

NEET & AIIMS

EXCRETORY PRODUCTS AND THEIR ELIMINATION

Example

1. Name the most toxic nitrogenous waste.



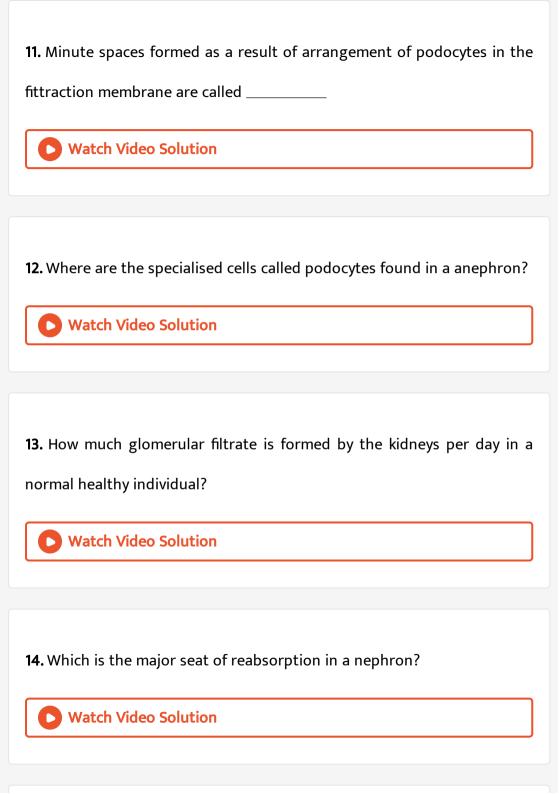
Watch Video Solution

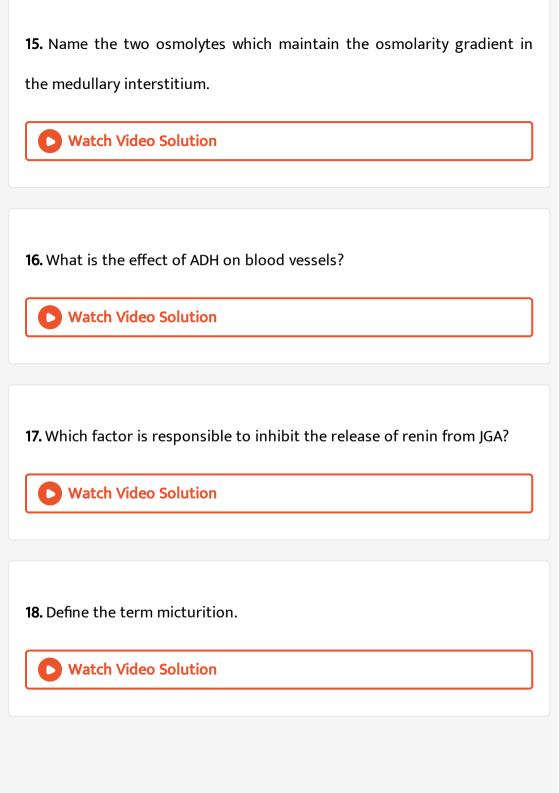
2. In which organ ammonia is converted into urea?

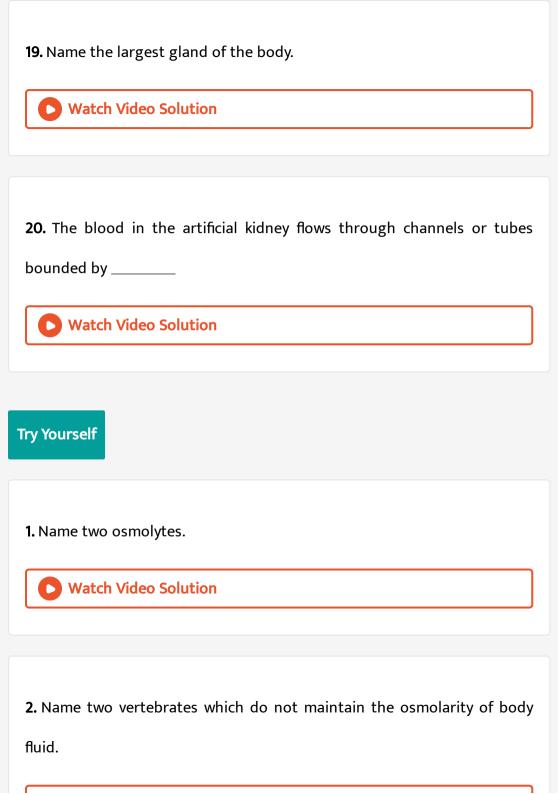


3. What do you mean by uricotelism?
Watch Video Solution
4. Name the main excretory organ of vertebrates.
Watch Video Solution
5. Name the excretory structure of prawn.
Watch Video Solution
6. The concave notch in the kidney through which ureter, blood vessels
and nerves enter is known as
Watch Video Solution

7. Name the structural ad functional unit of kident.
Watch Video Solution
8. Differentiate afferent arteriole with efferent arteriole in term of their diameter.
Watch Video Solution
9. Vasa recta is absent or highly reduced in a
Watch Video Solution
10. State the parts of nephorn situated in cortical region of kideny
Watch Video Solution







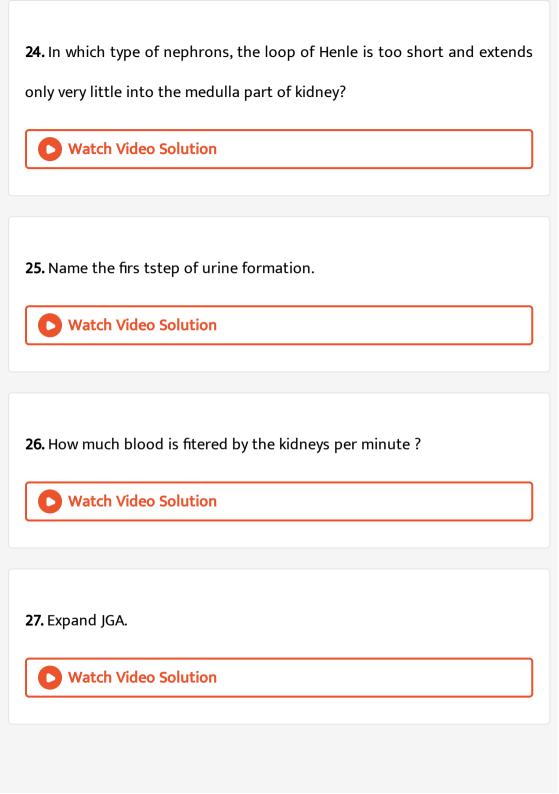
Watch Video Solution
3. Define the term "ammonotelism"
Watch Video Solution
4. Write down the role of kidney in the removal of ammonia.
Watch Video Solution
5. What do you mean by ureotelic animals?
Watch Video Solution
6. Name the main excertory product of mammals.
Watch Video Solution

7. How many ATP are used inside mitjochondria during urea cycle?
Watch Video Solution
8. Name the harmful wastes which are removed from blood in urea cycle.
Watch Video Solution
9. Exeretion of uric acid rewuires loss of water
Watch Video Solution
10. Name two uricotelic animals.
Watch Video Solution
11. Give the role of protonephridia.

Watch Video Solution
12. Name the excretory structures of earthworm.
Watch Video Solution
13. Malpighian tubules are the excretory structures of
Watch Video Solution
14. State the function of malpighian tubles.
Watch Video Solution
15. Name the two zones of kidney.
Watch Video Solution

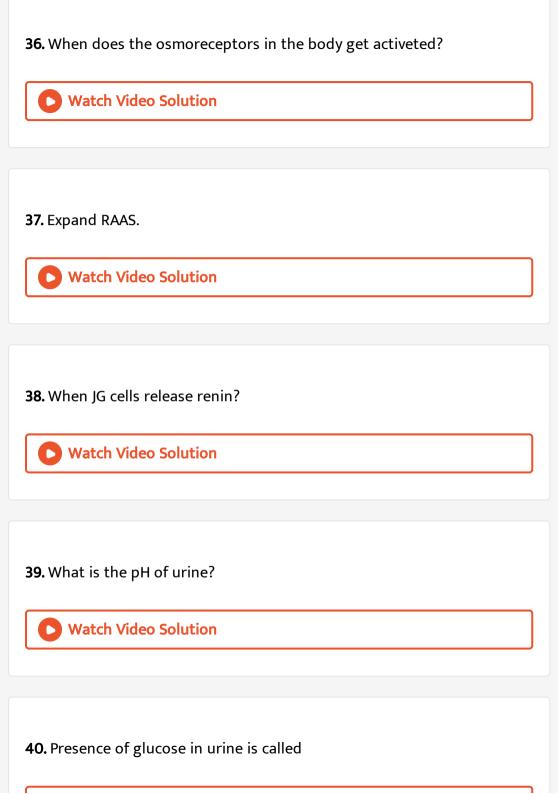
16. What are columns of Bertini?
Watch Video Solution
17. Name the two main parts of nephoron.
Watch Video Solution
18. The branch of renal artery entering the glomerulus is
Watch Video Solution
19. What is Malpighian body ?
Watch Video Solution
20. Bowman's capsule leads into

Watch Video Solution
21. Which type of epithelium is found in PCT?
Watch Video Solution
22. The U-shaped blood vessel running parallel to the Henle's loop is
Watch Video Solution
23. Which type of nephrones are less in number, cortical or uxtamedullary nephrons?
Watch Video Solution



28. Which cell of JGA secretge renin?
Watch Video Solution
29. What percentage of filtrate is rabsorbed by renal tubule?
Watch Video Solution
30. The process by which additional metabolic wastes are provided by the tubular cells to the filtrate is known as
Watch Video Solution
31. In which segment of nephoron minimum reabsorption takes place?
Watch Video Solution

32. Which limb of loop of Henle is impermeable to wate but allow						
transport of electrolyte actively or passively?						
Watch Video Solution						
33. State the magnitude of osmolanrity in the cortex of kidney.						
Watch Video Solution						
34. Human kidneys can produce urine nearly times concentrated						
then the initial filtrate formed.						
Watch Video Solution						
35. What fo you mena by diuresis?						
Watch Video Solution						



Watch Video Solution
41. State the metabolic wastes of lungs.
Watch Video Solution
42. State the composition of sweat.
Watch Video Solution
43. What is uremia ?
Watch Video Solution
44. Which is the ultimate method in the correction of acute fenal failures
?
Watch Video Solution

Exercise

1.	Most	of	vertebrates	can	maintain	а	constant	internal	osmolarity
di	fferent	fro	m the surrou	ndin	g medium,	ex	cept		

- A. Myxine
- B. Sharks
- C. Bony fishes
- D. Both (1) & (2)

Answer: D



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2. Some animals convert highly toxic NH_3 into least toxic trimethylamine oxide (TMAO) and retain high concentration of TMAO and urea to minimise H_2O loss from body are

D. Marine bony fishes Answer: A **Watch Video Solution** 3. Find out incorrect statement w.r.t. the human kidney A. Left is little higher than the right one B. Retropertioneal in position C. Contains two million neurons, each D. Located in abdomen at the level of T_{12} to L_3

Watch Video Solution

A. Sharks and rays

B. Fresh water bony

C. Myxine

Answer: C

4. The opening of urinary bladder is guarded by two urethral sphincter,
which one is involuntary in function
A. Internal sphincter
B. External sphincter 0

D. Both the sphincters are voluntary

Answer: A



C. Both the sphincters

- 5. Find out incorrect statement w.r.t. the cortical nephrons
 - A. Most common nephrons in human kidney
 - B. Bowman's capsule lies close to kidney surface
 - C. Vasa recta is reduced or absent

D. Control volume of plasma under stress condition
Answer: D
Watch Video Solution
6. Where do you find podocyte cells in human body?
A. Brain
B. Liver
C. Kidney
D. Pancreas
Answer: C
Watch Video Solution

7. Proximal	convoluted	tuble is	highly	specialized	for	reabsorption	of
substances.	It is lined by	,					

- A. Simple squamous epithelim
- B. Simple columnar epithelium
- C. Simple cuboidal epithelium without microvilli
- D. Simple cuboidal epithelium with microvilli

Answer: D



- **8.** Which of the following cannot be considered as part of structur of uriniferous tuble?
 - A. Bowman's capsule
 - B. Convoluted tubule
 - C. Henle's loop

D. Collecting duct
Answer: D
Watch Video Solution
9. The most advanced kidneys in which loop of Henle is present are called metanephric kidneys, these are found in all, except one
A. Amphibians
B. Reptiles
C. Birds
D. Mammals
Answer: D
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10. Which of the following structure helps in exoretion and conservation of water in terrestrial arthropoods?

- A. Maplpighian body
- B. Antennary gland
- C. Malpighian tubules
- D. Keber's organs

Answer: C



11. Hypersomlarity of interstitial fluid in renal medulla is maintained by retaining high concentration of

- A. Urea
- B. TMAO
- C. Urea and NaCl

D. Urea and Uric acid

Answer: C



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12. How much amount of blood passes through the kidneys per minute in a health person?

A. $125-150\,\mathrm{ml}$

 $\mathsf{B.}\,600-700\,\mathsf{ml}$

 $\text{C.}\ 1100-1200\ \text{ml}$

D. 180 litre

Answer: C



13. Chemically glomerular filtrate is similar to blood plasma, except
A. Urea
B. Glucose
C. Proteins
D. Electrolytes
Answer: C
Watch Video Solution
14. A fall in GFR can activate the JG cells to release which can stimulate the glomerular blood flow and threby the GFR back to normal
A. Renin
B. Angiotensin-II
C. Rennin

Answer: A



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15. Substances like glucose, amino acid $NA^{\,+}\,$ etc. in the filtrate are reabsorbed by

- A. Active transport
- B. Passive transport
- C. Both active and passive transport
- D. Facilitated diffusion

Answer: A



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16. Osmotic concentration of flomerular filtrate is the highest at the bottom of the U-shaped Henie loop. It is about $___mOsmL^{-1}$

A. 300
B. 600
C. 900
D. 1200
Answer: D Watch Video Solution
Wates video solution
17. Which part of nephron is impermeable of ${\cal H}_2{\cal O}$ but allows transport of electrolytes actively or passively?
A. PCT
B. Descending limb of Loop of Henle
C. Ascending limb of Loop iof Henle
D. DCT
Answer: C



18. Counter current machanism helps in concentrating urine in animals and mainly operaters on

a. Henle's loop b. Vasa-react

c. PCT d. DCT

A. a only

B. b only

C. a and b

D. All of these

Answer: C



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19. Diuretic substances like tea, coffee, alcohol etc. increases urine uptput

by inhibiting release of hormone

A. Renin B. Aldosterone C. ADH D. Erythropoietin **Answer: C Watch Video Solution** 20. Mark the inappropriate term w.r.t. the glomerular filtration A. Non selective **B.** Passive process C. Active process D. Occurs due to pressure difference Answer: C **Watch Video Solution**

21. Dialysis fluid contains all the constituents as in plasma except
A. Glucose
B. NaCl
C. Amino acids
D. Urea
Answer: D Watch Video Solution
22. Reabsorption of water from distal parts of the tubules is facilitated by hormone
A. Vassopression
B. ADH
D. ABIT

D. Both 1 & 2

Answer: D



Watch Video Solution

23. Mark the incorrect statement:

A. Micturition is carried out by a reflex

B. ADH helps in ${\cal H}_2{\cal O}$ elimination, making the urine hypotonic

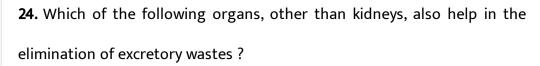
C. Protein-free fluid is filtered from blood plasma into the Bowman's

capsule

D. Glucose is actively reabsorbed in the PCT

Answer: B





- a. Lungs b. Liver
- c. Skin d. Sebaceous glands
 - A. a only
 - B. a and b
 - C. a, b and c
 - D. a, b, c and d

Answer: D



25. Find out the incorrectyly matching pair w.r.t. the accessory excretory organs and the excretory wastes eliminated by them

A. Liver-Bilirubin, biliverding and cholesterol

B. Lungs- CO_2 and H_2O

C. Silvary gland- Heavy metals, drugs, small amounts of nitrogenous wastes D. Sudorfic gland-Sebum containing waxes, sterols and fatty acids Answer: D **Watch Video Solution** 26. Presence of glucose (glycosuria) and ketone bodies (ketonuria) in urine are indicative of _____ A. Renal failure B. Diabetes mellitus C. Bright's disease D. Renal stone Answer: B

27. In case of dehydration, secretion of all harmones increases expect one
mark this except one
A. Renin
B. Aldosterone
C. Vassopressin
D. ANF
Answer: D
Watch Video Solution
28. Which of the following is a powerful vasoconstrctor that increases the
glomerular blood pressure and thereby the GFR?
A HADID
A. Renin

C. Aldosterone
D. ANF
Answer: B
Watch Video Solution
29. Which part of brain sends valuntary motor signals to smooth muscles
of urinary bladder when the bladder get filled with urine?
A. Medulla
B. Cerebral cortex
C. Hypothalamus
D. Brain stem
Answer: B
Watch Video Solution

30. Which of the following is not metabolised in human body and therefore, used in determining glomerular filtration rate ?

- A. Insulin
- B. Inulin
- C. Cellulose xanthate
- D. Toxic ketones

Answer: B



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Section A Objective Type Questions

- 1. On an average how much urea is exreted out per day
 - A. $25-30~\mathrm{g}$
 - $\mathrm{B.}\,15-20\,\mathrm{g}$

C. 35	_	40	٤

 $\mathrm{D.}\,40-45\,\mathrm{g}$

Answer: A



Watch Video Solution

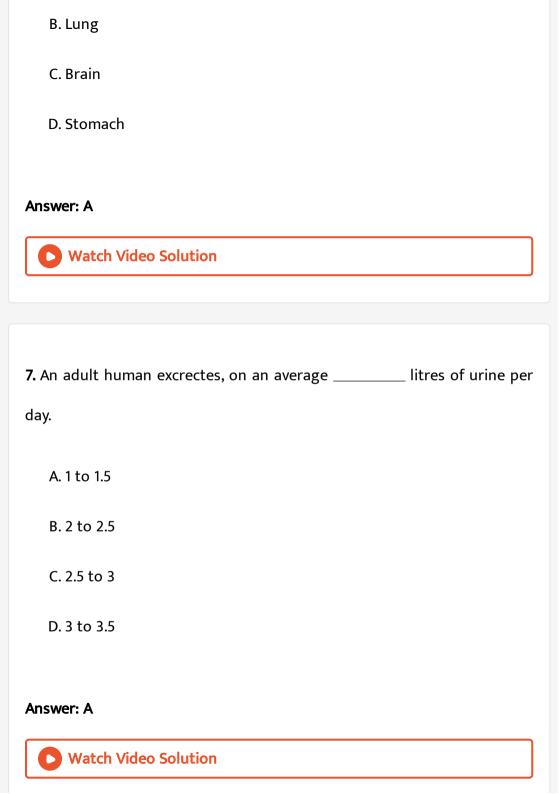
- **2.** The most toxic introgenous waste excreted by many bony fishes, aquatic amphibians and aquatic insect is
 - A. Ammonia
 - B. Urea
 - C. Uric acid
 - D. Both 2 & 3

Answer: A



3. In crustaceans, the excretory functions are performed by A. Antennal glands B. Green glands C. Both 1 & 2 D. Malpighian tubules Answer: C **Watch Video Solution 4.** Nearly all of the essential nutrients, and $70-80\,\%$ of electrolytes and water are reabsorbed in the A. PCT B. Henle's loop C. DCT D. Collecting duct

Answer: A Watch Video Solution 5. Vasa react is A. L-shaped B. U-shaped C. S-shaped D. V-shaped **Answer: B** Watch Video Solution 6. Which is the largest digestive gland of our body? A. Liver



- **8.** Malpighian body or renal corpuscle is
 - A. Glomerulus along with collecting duct
 - B. Glomerulus along with DTC
 - C. Glomerulus along with Bowman's capsule
 - D. Glomerulus along with Loop of Henle

Answer: C



- 9. The excretory structure of Amphioxus (Cephalochordate) is
 - A. Flame cell/ Solenocyte
 - B. Coxal gland
 - C. Malpighian tubules
 - D. Green gland

Answer: A



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- 10. Least toxic nitrogenous waste among the following is
 - A. Urea
 - B. Uric acid
 - C. Ammonia
 - D. More than one option is correct

Answer: B



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11. The part through which arteries and veins enter or leave the kidney is called

A. Hilus B. Renal papilla C. Major clayces D. Minor calyces Answer: A **Watch Video Solution** 12. Podocytes occur in A. Glomerual capillaries B. Neck region of nephron C. Inner wall of Bowman's capsule D. Outer wall of Bowman's capsule Answer: C **Watch Video Solution**

13. Loop of Henle is found in
A. Green gland
B. Malpighian tubule
C. Neuron
D. Nephron
Answer: D
Watch Video Solution
Watch Video Solution
14. Nitrogenous metabolic wastes in our body ar the products of
14. Nitrogenous metabolic wastes in our body ar the products of
14. Nitrogenous metabolic wastes in our body ar the products of A. Carbohydrates

Answer: B
Watch Video Solution
15. Which one of the following is also known as antidiuretic hormone?
A. Oxytocin
B. Vasopressin
C. Adrenaline
D. Aldosterone
Answer: B
Watch Video Solution
16. Human beings are

D. Vitamins

B. Ureotelic C. Ammonotelic D. Both 2 & 3 **Answer: B Watch Video Solution** 17. 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 machanism in Hencle's loop/vassa recta

Answer: D

A. Uricotelic



18. Uric acid is an excretory product of

- a. Cockroach b. Sparrow
- c. Terrestrial reptiles d. Man
 - A. a & d
 - B. b & d
 - C. a, b & c
 - D. a, c & d

Answer: C



- 19. All are performed in a nephron, except
 - A. Filtration
 - B. Secretion

Answer: C **Watch Video Solution** 20. First step in urine formation is A. Ultrafitration B. Tubular secretion C. Selective secretion D. Tubular reabsorption Answer: A **Watch Video Solution**

C. Urea synthesis

D. Reabsorption

21. Kidneys are reddish brown, bean-shaped structures situated between the levels of _____ thoracic and _____ lumbar vertebrae.

- A. $11^{th},\,1^{th}$
- $\mathsf{B.}\,12^{th},\,3^{rd}$
- C. 10^{th} , 2^{nd}
- D. 12^{th} , 5^{th}

Answer: B



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22. As compared to plasma, all are the constituents of dialysis fluid, except

- A. NaCl
- B. Glucose
- C. Aminoacid

D. Urea
Answer: D
Watch Video Solution
23. Which one is the vasoconstrictor?
A. ANF
B. Renin
C. Angiotensin-II
D. Histamine
Answer: C
Watch Video Solution
24. The condition of accurnulation of urea in blood is termed as

A. Uremia B. Diuresis C. Glycosuria D. Haematuria Answer: A **Watch Video Solution** 25. Glucose and amino acids in the filtrate are reabsorbed by tubular epitheliar cells through A. Active transport B. Passive transport C. Both 1 and 2 D. Osmosis Answer: A



26. Which one does not enter nephron

- A. Water
- B. Glucose
- C. Urea
- D. Plasma proteins

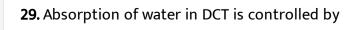
Answer: D

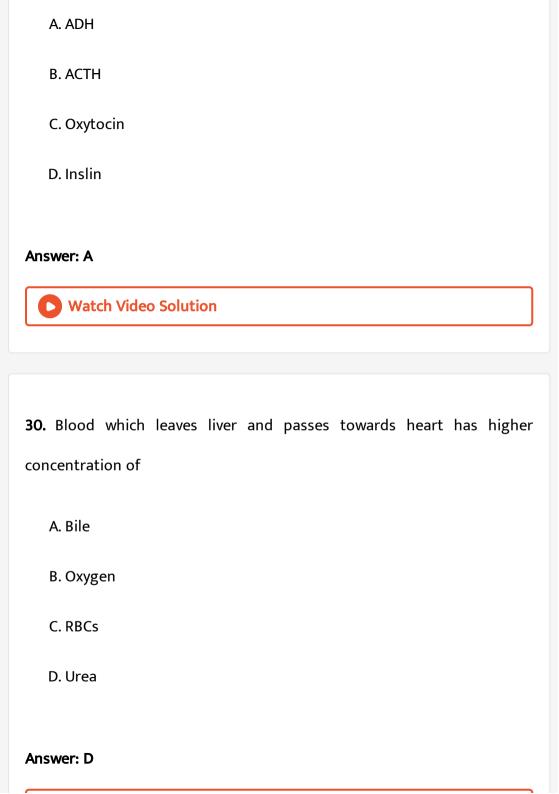


27. I he cause or giomeruilar mtration is

- A. Osmosis
- B. GHP
- C. Hemodialysis

Match Video Solution 8. The main function of loop of Henle is A. Blood filtration B. Urine formation C. Water conservation D. Both 1 & 2	D. Acidic pH
8. The main function of loop of Henle is A. Blood filtration B. Urine formation C. Water conservation D. Both 1 & 2	nswer: B
A. Blood filtration B. Urine formation C. Water conservation D. Both 1 & 2	Watch Video Solution
A. Blood filtration B. Urine formation C. Water conservation D. Both 1 & 2	
B. Urine formation C. Water conservation D. Both 1 & 2	8. The main function of loop of Henle is
C. Water conservation D. Both 1 & 2	A. Blood filtration
D. Both 1 & 2	B. Urine formation
	C. Water conservation
nswer: C	D. Both 1 & 2
A word who call the	







31. Maximum water reabsorption occurs in

A. DCT

B. PCT

C. Collecting duct

D. Descending limb of Henle

Answer: B



32. Aldosterone stimulates the reabsorption of

A. $Na^{\,+}$ ions

B. K^+ ions

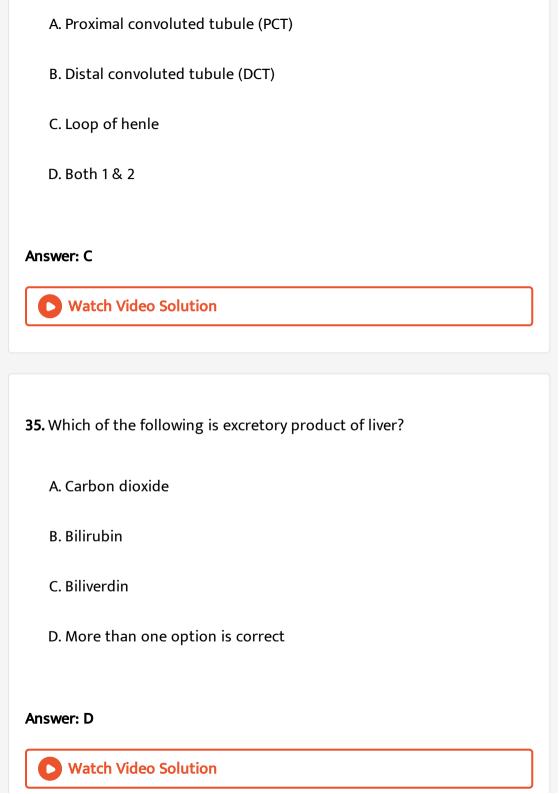
C. Glucose

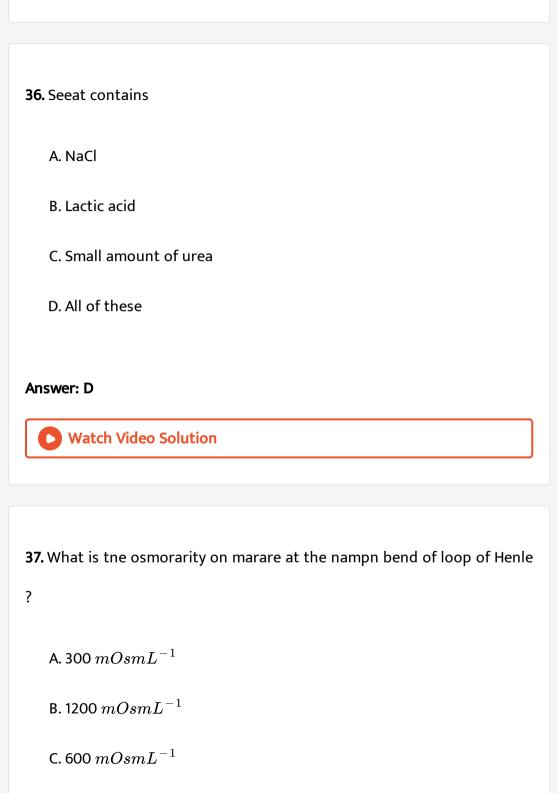
D. Ca^{2+} ions
nswer: A
Watch Video Solution
3. Micturition is
A. Removal of faecal matter
B. Removal of NH_3
C. Removal of urea
D. Removal of urine
nswer: D



Watch Video Solution

34. In which segment of the nephron, reabsorption is minimum?





ח	മററ	mOsm	L^{-1}
υ.	000	mosm	L

Answer: B



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Section B Objective Type Questions

- 1. The parts of nephron situated in cortical region of kidney are
 - A. Loop of henle, PCT and collectiong duice
 - B. Collecting duct, PCT and matpighian chorpuscle
 - C. PCT, DCT and Loop of Henle
 - D. PCT, DCT and Malpighian corpuscle

Answer: D



B. Diabetes insipidus
C. Reanal calcuuli
D. Glomerulonephritis
Answer: A
Watch Video Solution
3. On an average ml of blood is filtred by the kidneys per minute which consititute roughly of the blood pumped out by each ventricle of the heart in a minute.
A. $500-600.\ 1/5^{th}$ B. $1100-1200,\ 1/3^{rd}$ C. $500-600,\ 1/3^{rd}$
2.000 000, 1/0

2. The presence of ketone bodies in urine are indicative of?

A. Diabetes melitus

D. 1100 —	1200,	$1/5^{th}$
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Answer: D



Watch Video Solution

- 4. Which of the following statement is incorrect?
 - A. ADH is a vasoconstrictor
 - B. Aldosterone facilitates wate reabsorption
 - C. ANF enhance sodium reabsorption
 - D. ANF causes vasodilation

Answer: C



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5. Which one of the following statement is incorrect?

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

called medullary pyramids projecting into calyces

- B. Inside the kidney the cortical region extends in between the medullary pyramids as renal pelvis
- C. Golmerulus along with Bowman's capsule is called the renal corpuscle
- D. Renal corpuscale, proximaal convolute tubble (PCT) and distal convoluted tubule (DCT) of the nephron are situated in the cortical region of kidney

Answer: B



- **6.** Which one mineness of curve of nunnys
 - A. Vasopressing

B. Thyroxine C. Vasopressin and aldosterone D. Gonadotrophin **Answer: C View Text Solution** 7. Which of the following pairs is wrong? A. uricotelic - Birds

B. Ureotelic - Insects

D. Uretelic - Elephant

Answer: B

C. Ammonotelic - Bony fishes

- **8.** 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



- 9. Consider the following water conservation mechanism
- A. Nasal countercurrent mechanism
- B. dependence on metabolic water
- C. Highly hypertonic urine
- D. Living more on protein rich diet

The kangaroo rat living in desert can survive without drinking water because of

A. A, B & C

B. A, B & D

C. B, C & D

D. A, C & D

Answer: A



- **10.** Select the true statement.
 - A. In fishes kidney play 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 reptile excrete ammonia

Answer: C



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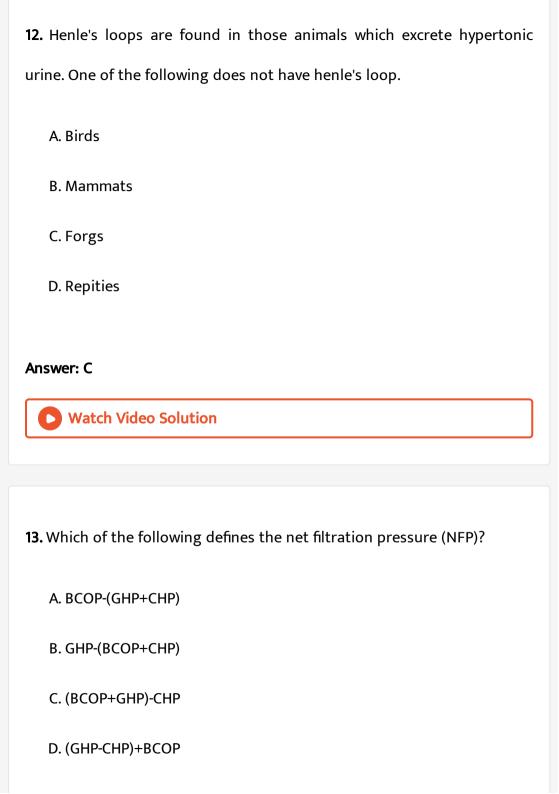
- **11.** The kidneys not only remove the waste products from the blood but also play a very important role in maintaining
 - A. Equlibrium of the body
 - B. Temperature of the body
 - C. Constant composition of the blood irrespective of the nature of the

food or fluid intake

D. Blood pressure constant

Answer: C





Answer: B



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- 14. Which of the following is correct?
 - A. Afferent arteriole is narrower than the efferent arteriole
 - B. Effect venule is narrower than vein
 - C. Efferent arteriole is narrow than afferent arteriole
 - D. Both afferent and effernet arteriole are of same diameter

Answer: C



- 15. 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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- 16. Angiotensin-II increases the blood volume by
 - A. Singnlling PCT to reabsorb more NaCl and water
 - B. Stimulating adrenal gland to release aldosterone
 - C. By stimulating the release of ADH
 - D. More thean one option is correct

Answer: D



A. Decreasses permeablity of distal convoluted tubule and collecting

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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18. The yellow color of urine is due to

A. Uric acid

B. Urea

C. Urochrome
D. Melanin
Answer: C
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19. Vitamin excreted by urine in higher vertebrates is
A. A
B. D
C. K
D. C
Answer: D
Watch Video Solution

- 20. Haematuria is the disorder involving
 - A. The loss of blood through the urine
 - B. Loss of haemoglobin in RBC
 - C. Loss of glucose in urine
 - D. The increase in concentration of blood urea

Answer: A



Section C Previous Years Questions

- 1. A decrease in blood pressure $\,/\,$ volume will not cause the release of
 - A. Renin
 - B. Atrial Natriuretic Factor
 - C. Aldosterone

Answer: B



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- 2. The part of nephron involved in active reabsorption of sodium is
 - A. Distal convoluted tubute
 - B. Proximal convoluted tubule
 - C. Browman's capsule
 - D. Descending limb of Henle's loop

Answer: B



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3. Human urine is usually acidic because

A. Hydrogen ions are actively secreted into the fitrate B. The sodium transporter exchanges one hydrogen ion for each sodium ion, in peritubular capillaries C. Excreted plasm proteins are acidic D. Potassium and sodium exchange generated acidity Answer: A **Watch Video Solution** 4. 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



5. Which of the following does not favour the formation of large

A. Atrial natriuretic factor

quantities of dilute urine

B. Alcohol

C. Ceffeine

D. Renin

Answer: D



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

A. Increase in aldosterone levels B. Increase in antidiuretic hormone levels C. Decrease in aldosterone levels D. Decrease in antidiuretic hormone levels Answer: A **Watch Video Solution**

- 7. The maximum amount of electrolytes and water (70-80 per cent) from 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

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

B \boldsymbol{A} Ureotelic Uricotelic A. Ammonotelic Pigon Humans Aquatic Amphibia Lizards Cockroach Frog B. Ammonotelic Ureotelic Uricotelic Aquatic Amphibia Lizards Cocroach Pigeon Frog Lizards B \boldsymbol{A} C. Ammonotelic Ureotelic Uricotelic Aquatic Amphibia Frog Humans Pigon Lizards Cocroach \boldsymbol{A} \boldsymbol{R} D. Ammonotelic Ureotelic Uricotelic

Aquatic Amphibia Cocroach Humans Frog Pigeon Lizards

Answer: C



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

- A. Posterior pituitary to release vasopressin B. Joxtra glomerular cells to release renin C. Adrenal cortex to release aldosterone D. Adrenal medulla to release adrenaline Answer: B **Watch Video Solution** 10. Which one of the following is not a part of a renal pyramid A. Loop of Henle B. Pertubular capillaries

- C. Convoluted tubules
- D. Collecting ducts

Answer: C



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

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

- B. Podocytes: Create minute spaces (slit pores) for the fitration of blood into the Bowman's capsule.
- C. Henle's loop: most reabsorption of the major substances from the glomerular filtrate
- D. Distal convoluted tubles: reabsorption of K^{\pm} ions into the surrounding blood capillaries

Answer: B



12. 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



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

A. During summer when body loses lot of water by evaporatio, the

release of ADH is suppressed

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

C. Exprosure to cold temperatuer stimulates ADH release

D. An increase in glomerular blood flow stimulates formation of

Angiotensin

Answer: B



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

- A. Asconding limb of Loop of Henle is impermeable to electrolytes
- B. Descending limb of Loop of Henle is impermeable of water
- C. Distal convoluted tuble is incapable of reabsorbind HCO_3
- D. Nearly 99 percent of the glomerular fitrateis reabsorbed by the renal tubules

Answer: D



- 15. The principal nitrogenous exretory compound in humans is syntheised
 - A. In the liver, but eliminated mostly through kidneys
 - B. In kidneys, but eleminated mostly through liver
 - C. In kidneys as well as eliminated by kidneys
 - D. In liver and also eliminated by the same through bile

Answer: A



- **16.** In which of the following organisms, the excretory organs are correctly stated?
 - A. Humans Kidneys, subacecos glands and tear glands
 - B. Earthworm Pharyngeal, integumentary and septal nephridia
 - C. Cocroach Malpighian tubules and enteric caeca

D. Frog - Kidneys, skin and buccal epithelium

Answer: B



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

A. Micturition will continue

B. Urine will continue to collect normally in the bladder

C. There will be no micturition

D. Urine will not collect in the bladder

Answer: C



18. Angiotensinogen is a protein produced and secreted by A. Macula densa cells B. Endothelial cells (cells lining the blood vessels) C. Liver cells D. Juxtaglomerular (JG) cells **Answer: C Watch Video Solution** 19. The net pressure gradient that causes the fluid to filter out of the glomeruli into the capsule is -A. 20 mm Hg B. 75 mm Hg C. 30 mm Hg D. 50 mm Hg

Answer: A



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20. In Ornithine cycle which one pair of the following wastes as removed from the blood?

- A. Urea and urine
- B. Ammonia and urea
- $C. CO_2$ and ammonia
- D. CO_2 and urea

Answer: C



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21. A person is undergoing prolonged fasting. His urine would contain absormal quantities of

A. Fats B. Ketones C. Amino acids D. Glucose **Answer: B Watch Video Solution** 22. Two animals in which the nitrogenous wastes are excreted from body in the from of urin acid are A. Birds and lizards B. Frogs and cartilaginous fishes C. Insects and bony fishes D. Mammals and mollusc Answer: A



- 23. Uricotelism is found in
 - A. Mammals and birds
 - B. Fishes and fresh water protozoans
 - C. Birds, reptiles and insects
 - D. Forgs and toads

Answer: C



- 24. A terrestrial animal must be able to
 - A. Excrete large amount of water in urine
 - B. Conserve water
 - C. Actively pump salts out through the skin

	D. Ex	crete	larg	ge am	ounts	of salts in uri	ne			
٩ns	swer:	В								
) w	atch	Vide	eo So	lution					
25.	Uric	acio	l is	the	chief	nitrogenous	component	of	the	ex

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

- A. Frog
- B. Man
- C. Earthworm
- D. Cockroach

Answer: D



- **26.** if an osmoconformer animal is placed in sea water then
 - A. It will develop incocytes to actively absorb the salts from outside
 - B. it will develop a thick body covber to prevent enter of excess of
 - C. It will start passing dilute urine
 - D. It will change osmolarity of its body fluid.

Answer: D



- 27. Contractile vacule to pump out excess of water is found in
 - A. Fresh water protozons
 - B. marine protozoans
 - C. Parastic protozoans

D. Lower chordates
Answer: A
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28. In ureotelic animals, urea is formed by
A. kreb's cycle
B. EM pathway
C. Ornitine cycle
D. Cori's cycle
Answer: C
Watch Video Solution

29. Arginase enzyme will be operting at which step of the ornithine cycle?

A. Ornitine \rightarrow Urea B. Arginine \rightarrow Ornithine C. Ornithine \rightarrow Citrulline D. Citrulline \rightarrow Arginosuccinate **Answer: B** Watch Video Solution 30. Uric acid is produced by metabolism of A. Adenine B. Guanine C. Cytosine D. Both 1 & 2 **Answer: D** Watch Video Solution

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

A. Distal convoluted tubute

B. Collecting duct

C. Bowman's capsule

D. Loop of Henie

Answer: B



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32. Math the following

Column I Column II

a. PCT (i) Function is Na^+ and K^+ homeostasis

b. Descending loop of Henle (ii)Permable of NaCl but impermeable to war

c. Ascending loop of Henle (iii) Permeable to water but not to salt d. DCT (iv) Reabsorbing about 90% of the important

A. a(i), b(ii), c(iii)d(iv)

 $\mathsf{B}.\,a(i),b(iii),c(ii)d(iv)$

 $\mathsf{C.}\ a(iv),b(iii),c(ii)d(i)$

 $\mathrm{D.}\,a(ii),b(iii),c(i)d(iv)$

Answer: C



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33. Brush border surface is the distinct feature of which of the following part of nephron?

A. PCT

B. Ascending limb of loop of Henle

C. DCT

D. Collecting duct

Answer: A

34. Which of the following statement is not ture?

A. Descending limb of loop of henle is permeable to urea

B. DCT function in $K^{\,+}\,,\,Na^{\,+}$ homeostasis

C. Descending limb is impermeable to water

D. Loop of Henle is largely resopnsible for concentrating urine

Answer: C



35. Hypertonicity of fitreate is minimum at

A. Base of lop of henle

B. Inner most part of medulla

C. Outer part of medulla

D. Cortical region

Answer: D



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36. As the glomerular fitrate courses the tubules, its composition and osmotic concentration changes, due to tubular reabsorption. Which of the following is incorrect match regarding the segment of nephron and osmotic concentration of filtrate ?

A. Segment of nephron Osmotic concentration of filtrate
Proximal convoluted tuble Istonic to blood plasms

В.

Segment of nephron Osmotic concentration of filtrate

Descending limb of Henle's loop Hypotonic

C.

Segment of nephron Osmotic concentration of filtrate

Ascending limb of Henle's loop Hypotonic

Segment of nephron Osmotic concentration of filtrate

Bowman's capsule Hypotonic

Answer: D



- 37. Concentration of urine depends upon which organ -
 - 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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38. If Henle's loop were absent from mammalian nephron which 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 **Watch Video Solution** 39. Which of the following changes can occur in rsponse to increased Angiotensin-II level? A. Increase in the glomerular hydrostatic pressure (GHP) B. Inhibition of aldosterone

C. Decrease in the GFR

D. Decrease in BCOP

Answer: A



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40. Which one is mainly responsible for absorption of Na^+ in the PCT part of nephron?

- A. Angiotensin-II
- B. Angiotensin-I
- C. Aldosterone
- D. Atrial Natriuretic Factor (ANF)

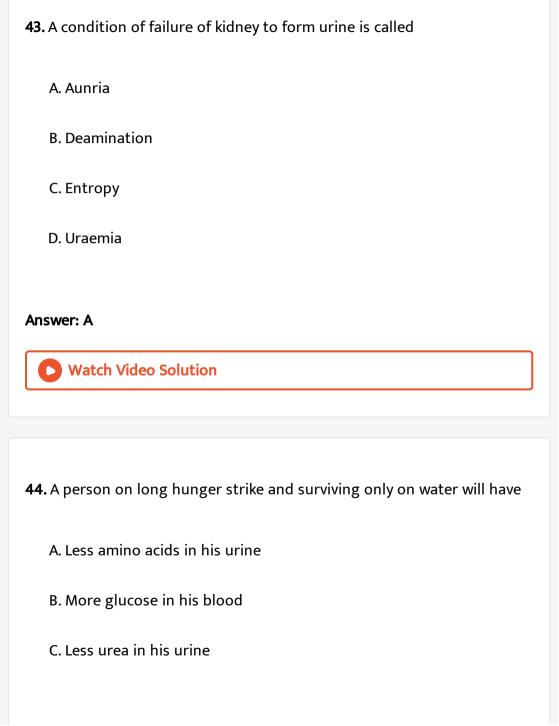
Answer: A



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41. In response to decrease in blood volume and blood pressure which of the following do not occur ?

A. Secretion of renin B. Secretion of aldosterone C. Secretion of vassopressin D. Secretion of ANE Answer: D **Watch Video Solution 42.** Which of the following is not a feature of cortical nephros? A. These are more common, approximately $85\,\%$ of nephrons B. Their glomeruli are in outer cortex C. Their loop of Henle extend to a short distance into the medulla D. They are associated with vasa recta Answer: D



D. More sodium in his urine
Answer: C
Watch Video Solution
45. Which of the following is not present in sweat ?
A. Amino acid
B. NaCl
C. Lactic acid
D. Uric acid
Answer: D
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46. Body fluids of shark and coelacanths can be termed as

- A. Hyperosmotic and hypoionic to sea water
- B. Hypersomtic and hyperionic to sea water
- C. Hyposmotic and hypotonic to sea water
- D. Hyposmotic and hyperionic to sea water

Answer: A



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Section D Assertin Reason Type Quastion

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 & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: A



- 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 & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the

correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: B



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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 & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

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 & Reason are true and the reason is the correct

explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: A



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 & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: D



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6. Assertion: In the descending limb of loop of Henle the urine is hypotoonic, while in ascending limb of loop of Henle, the urine is

hypertonic.

Reason: Descending limb is impermeable to water while ascending limb is impermeable to $Na^{\,+}$

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: A



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7. A: The final reabsorption of water from urine into blood ocurs through the collecting duct of a mammalian nephron, resulting in the production of hyperosomotic urine.

R: The loop of Henle is responsible for the formation of a sodium gradient across the depth of the medullary intersitium of a mammalian kidney.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: B



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8. Assertion : Diabetes insipidus iS marked by excessive urination and too much thirst for water .

Reason: Anti-diuretic hormone (ADH) is secreted by the posterior lobe of pituitary gland.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: C



9. A: Lnulin is ussed in testing kidney function especially glomerular fittation.

R: Lnulin ia a fructan strong polysaccharide.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: B



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10. A: Tubular secretion is of considerable importance in larine teleost fishes.

R: These have aglomerular kidney i.e., no fitration occurs and tubular secetion is the only way of excertion.

A. If both Assertion & Reason are true and the reason is the correct

explanation of the assertin, then mark (1)

B. If both Assertion & Reason are true but the reason is not the correct explanation of the assertin, then mark (2)

C. If Assertion is true statement but Reason is false, then mark (3)

D. If both Assertin and Reason are false statements, then mark (4)

Answer: A

