



## BIOLOGY

### BOOKS - MTG BIOLOGY (HINGLISH)

#### EXCRETORY PRODUCTS AND THEIR ELIMINATION

##### Excretory Products And Their Elimination

1. Which of the following is the most toxic excretory product?

- A.  $CO_2$
- B. Ammonia
- C. Urea
- D. Amino acids

**Answer: B**



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2. Almost all the aquatic animals excrete ammonia as the nitrogenous waste product. Which of the following statements is not in agreement with this situation?

- A. Ammonia is easily soluble in water
- B. ammonia is released from the body in a gaseous state.
- C. Ammonia is highly toxic and needs to be eliminated when formed.
- D. both a and b

**Answer: B**



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3. The principal nitrogenous excretory compound in humans is synthesized

- A. in kidneys but eliminated mostly through liver

B. 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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4. Which one of the following options gives the correct categorisation of animals according to the type of nitrogenous waste they give out?

A. Ammonotelic      Ureotelic      Uricotelic  
Pigeon, humans      Aquatic amphibia, lizards      Cockroach, frog

B. Ammonotelic      Ureotelic      Uricotelic  
frog, lizards      Aquatic amphibia, humans      Cockroach, frog

C.

Ammonotelic      Ureotelic      Uricotelic  
Aquatic animals      Frog, amphibia, humans      Pigeon, lizards, cockroach

D.

Ammonotelic      Ureotelic      Uricotelic  
Aquatic animals      Cockroach, amphibia, humans      Pigeon, lizards

**Answer: C**



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**5. Which of the following pairs of organisms are uricotelic?**

- A. Cartilaginous fish and mammals
- B. Reptiles and mammals
- C. Birds and insects
- D. Bony fish and lizards

**Answer: C**



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**6. Which of the following groups contains uricotelic animals only?**

- A. Reptiles, birds, land snails, insect



B. Reptiles, birds, land snail, aquatic insects

C. Amphibians, birds, lands snails, insects

D. Amphibians, reptiles, birds, insect

**Answer: A**



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7. Which one of the following options shows a correct matching pair?

A. Man-Ureotelic

B. Bird-Ammonotelic

C. Fish-Uricotelic

D. Frog-Uricotelic

**Answer: A**



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8. The characteristic(s) common to urea, uric acid and ammonia is/are

- (i). They are nitrogenous wastes.
- (ii). They all need very large amount of water for excretion.
- (iii). They are all equally toxic.
- (iv). They are produced in the kidneys

A. (i),(iii) and (iv)

B. (i) only

C. (i) and (iii)

D. (i) and (iv)

**Answer: B**



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9. Match column I with column II and select the correct option from the codes given below

Column I

A. Nephridia

B. Malpighian tubules

C. Anetennal gland or green glands

Column II

(i). Crustaceans

(ii). Annelids

(iii). Insects

A. A-(i),B-(ii),C-(iii)

B. A-(iii),B-(ii),C-(i)

C. A-(ii),B-(iii),C-(i)

D. A-(ii),B-(i),C-(iii)

**Answer: C**



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**10.** Select the correct option representing the excretory organs present in

(i) earthworm, (ii) centipede, (iii) prawn, and (iv) flatworm.

- |    |                    |                    |                    |              |
|----|--------------------|--------------------|--------------------|--------------|
|    | (i)                | (ii)               | (iii)              | (iv)         |
| A. | Malpighian tubules | Flame cell         | Nephridia          | Green glands |
| B. | Flame cell         | Green gland        | Malpighian tubules | Nephridia    |
| C. | Nephridia          | Malpighian tubules | Green gland        | Flame cell   |

- D. (i) Green gland      (ii) Nephridia      (iii) Flame cell      (iv) Malpighian

**Answer: C**

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11. Which one of the following organisms is correctly matched with its excretory organs?

- A. Humans-Kidneys, sebaceous glands and tear glands
- B. Earthworm-Pharyngeal, integumentary and septal nephridia
- C. Cockroach-Malpighian tubules and enteric caecae
- D. Frog-Kidneys, skin and buccal epithelium

**Answer: B**

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12. Which of the following statements is incorrect?

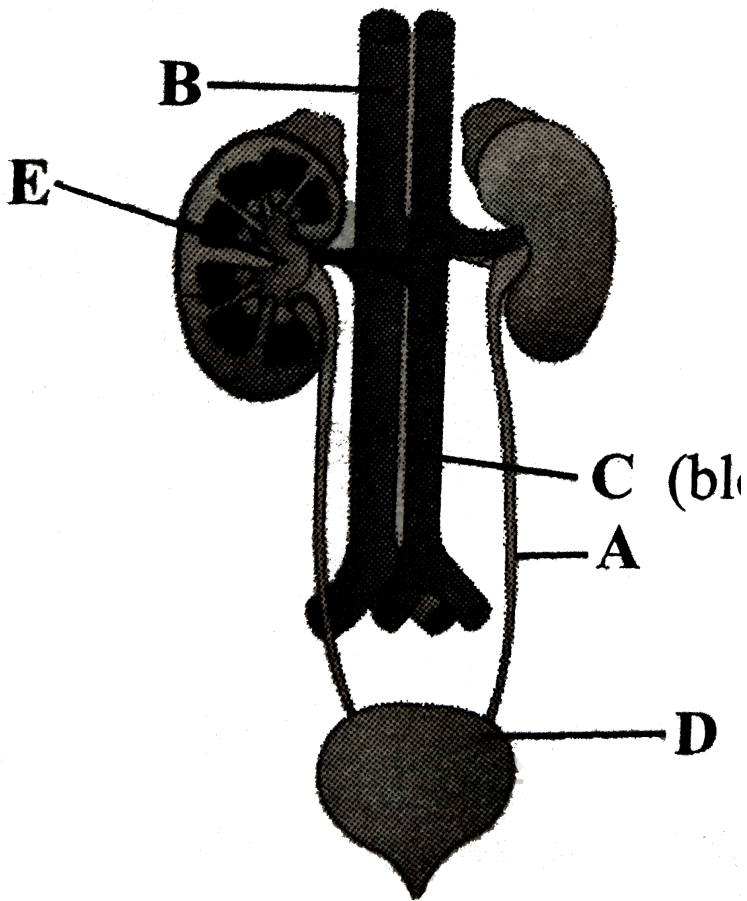
- A. In ureotelic organisms, ammonia is not a product of metabolism.
- B. In mammals, some amount of urea may be retained in the kidney matrix to maintain osmolarity.
- C. In fish, kidneys do not play any significant role in the removal of ammonium ions.
- D. Urea and uric acid are less toxic than ammonia.

**Answer: A**



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13. Refer to the given figure of human urinary system and select the option that correctly identifies the labelled parts A to E.



A.

*A*

*B*

*C*

*D*

*E*

Superior vena cava

Inferior Vena cava

Dorsal aorta

Uretra

Pelvis

B.

*A*

*B*

*C*

*D*

Inferior vena cava

Superior vena cava

Dorsal aorta

Urinary bladder

C.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
Ureter	Inferior Vena cava	Dorsal aorta	Urinary bladder	Pelvis

D.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
Dorsal aorta	Inferior vena cava	Superior vena cava	Urinary	Cor

**Answer: C**



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14. Which of the following options shows the correct measurements of an adult human kidney?

A. 

B. 

C. 

D. 

**Answer: A**

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15. Which of the following is the correct pathway for passage of urine in humans?

A. Collecting tubule → Ureter → Bladder → Urethra

B. Renal vein → Renal ureter → Bladder → Urethra

C. Pelvis → Medulla → Bladder → Urethra

D. Cortex → Medulla → Bladder → Ureter

**Answer: A**

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16. Statement-1: The urinary bladder dilates a good deal as urine trickles into it from the ureters.

Statement-2: Urinary bladder is lined throughout by transitional epithelium



- A. both statements 1 and 2 are correct.
- B. Statement 1 is correct but statement 2 is incorrect
- C. Statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect.

**Answer: A**

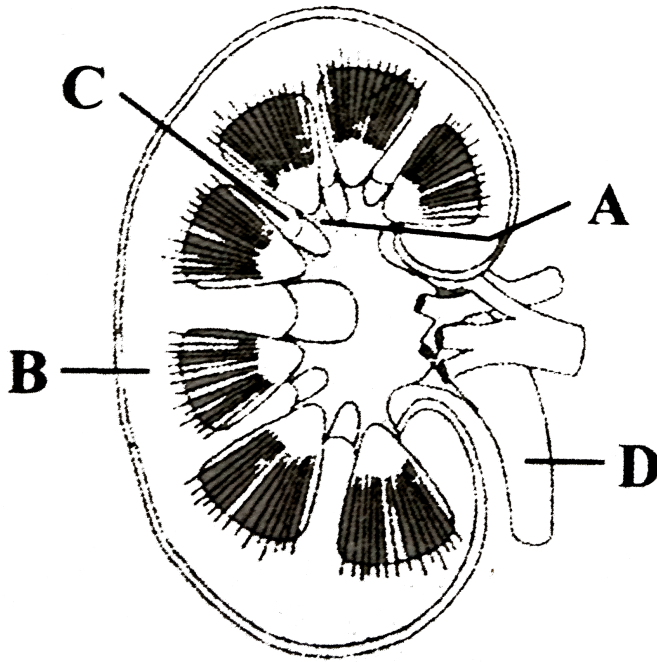
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17. A notch present on the inner medial side of kidney is

- A. ureter
- B. pelvis
- C. hilum
- D. pyramid.

**Answer: C**

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18.

Given figure is of longitudinal section of kidney. Identify the parts labelled as A to D and select the correct option.

- |    |          |          |              |          |
|----|----------|----------|--------------|----------|
|    | <i>A</i> | <i>B</i> | <i>C</i>     | <i>D</i> |
| A. | Cortex   | Calyx    | Renal column | Ureter   |
|    | <i>A</i> | <i>B</i> | <i>C</i>     | <i>D</i> |
| B. | Calyx    | Cortex   | Renal column | Ureter   |
|    | <i>A</i> | <i>B</i> | <i>C</i>     | <i>D</i> |
| C. | Medulla  | Cortex   | Renal column | Urethra  |
|    | <i>A</i> | <i>B</i> | <i>C</i>     | <i>D</i> |
| D. | Calyx    | Cortex   | Renal pelvis | Urethra  |

**Answer: B**



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**19.** Which of the following statements are false?

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

(ii). Medulla is divided into few renal pyramids.

(iii). Pyramid projects into calyx.

(iv). Inward extension of cortex between the pyramids is called renal column of bertini.

A. (i) and (iv)

B. (ii) and (iv)

C. (ii) and (iii)

D. None of these

**Answer: D**



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20. Columns of bertin in the kidneys of mammals are formed as extensions of

- A. cortex in medulla
- B. cortex in pelvis.
- C. medulla in pelvis
- D. pelvis in ureter.

**Answer: A**



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21. Which one of the following is not a part of renal pyramid?

- A. Peritubular capillaries
- B. Convoluted tubules
- C. Collecting ducts

D. Loop of Henle

**Answer: B**



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**22.** The basic functional unit of human kidney is

A. nephridia

B. Henle's loop

C. nephron

D. pyramid.

**Answer: C**



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**23.** Consider the following statements each with one or two blanks.

(i). Towards the centre of the inner concave surface of the kidney is a notch called (1) through which ureters, blood vessels and nerves enter.

(ii). The medulla of kidney is divided into a few conical masses called (2) projecting into the (3).

(iii). Glomerulus is a tuft of capillaries formed by the (4). artery. Blood from the glomerulus is carried away by an (5) artery.

Which one of the following options correctly fills the blanks in any two of the statements?

A. (1)-renal pelvis, (2)-calyces,(3)-medullary pyramids

B. (2)-medullary pyramids, (3)-calyces, (4)-afferent, (5)-efferent

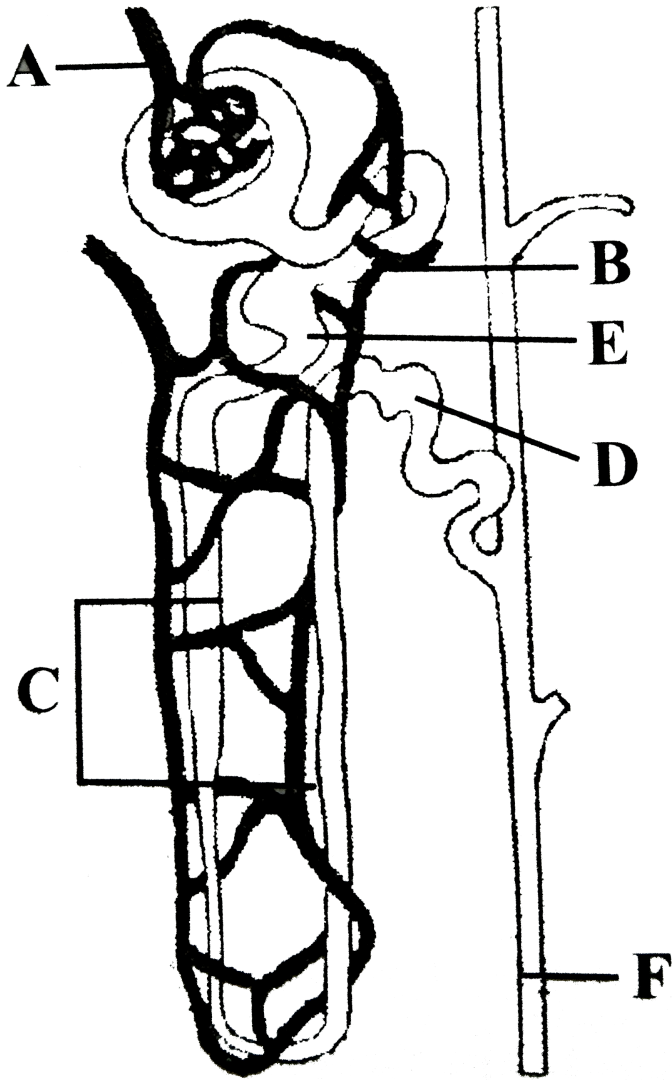
C. (2)-columns of bertin, (3)-chordae tendinae, (4)-efferent, (5)-afferent

D. (1)-filum, (4)-efferent, (5)-afferent

**Answer: B**



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24.

Select the options that correctly identifies the parts labelled from A to F in the given figure of nephron.

A.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
Afferent arteriole	PCT	Henle's loop	DCT	Collecting duct	Vas

B.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
Efferent arteriole	PCT	Henle's loop	DCT	Collecting duct	Vas

C.

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
Afferent arteriole	Peritubular capillaries	Henle's loop	DCT	PC

D.

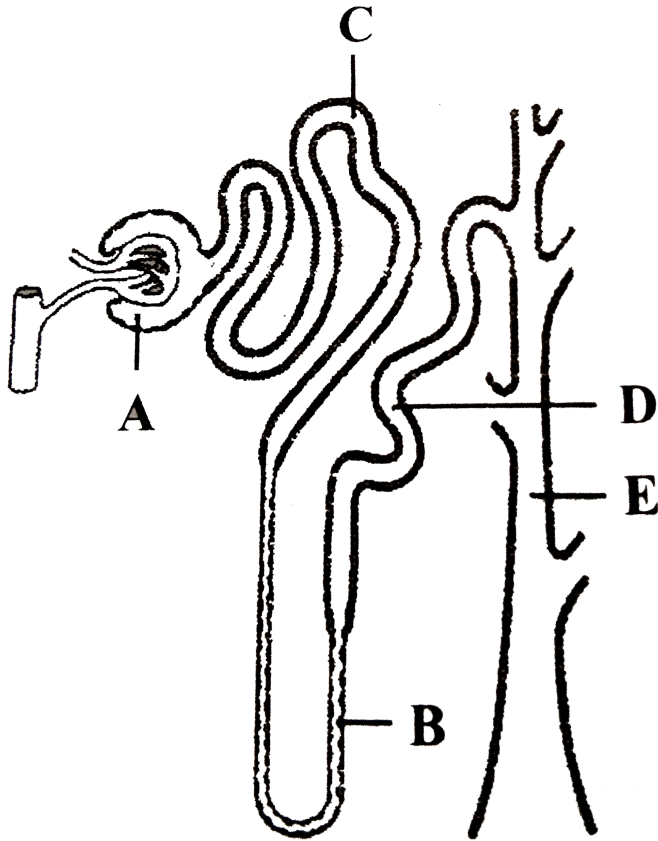
<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
Afferent arteriole	Henle's loop	Collecting duct	PCT	DCT	Peri

**Answer: C**



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25.

The given figure represents a single nephron from a mammalian kidney.

Identify the labelled parts, match them with the functions (i-iv) and select the correct option.

(i). The site of ultrafiltration.

(ii). Particularly sensitive to ADH.

(iii). The main site for the reabsorption of glucose and amino acids.

(iv). Largely responsible for the maintenance of blood pH.

A. (i)-A,(ii),E,(iii)-C,(iv)-D

B. (i)-A,(ii)-B,(iii)-C,(iv)-D

C. (i)-B,(ii)-A,(iii)-C,(iv)-E

D. (i)-E,(ii)-B,(iii)-D,(iv)-A

**Answer: A**



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**26.** Which of the following is not correct with respect to human kidney?

A. The peripheral region is called cortex and central is called medulla

B. Malpighian corpuscles are present in the cortical region

C. Blood enters glomerulus through efferent arterioles

D. The concave part of kidney is called hilus

**Answer: C**



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27. The bunch of capillaries present in the Bowman's capsule is called

- A. pacinian corpuscle
- B. Bowman's fibres
- C. glomerulus
- D. Malpighian corpuscle.

**Answer: C**



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28. A Malpighian body is constituted by

- A. Glomerulus only
- B. glomerulus and Bowman's capsule
- C. glomerulus and efferent vessel

D. glomerulus, Bowman's capsule and efferent vessel.

**Answer: B**



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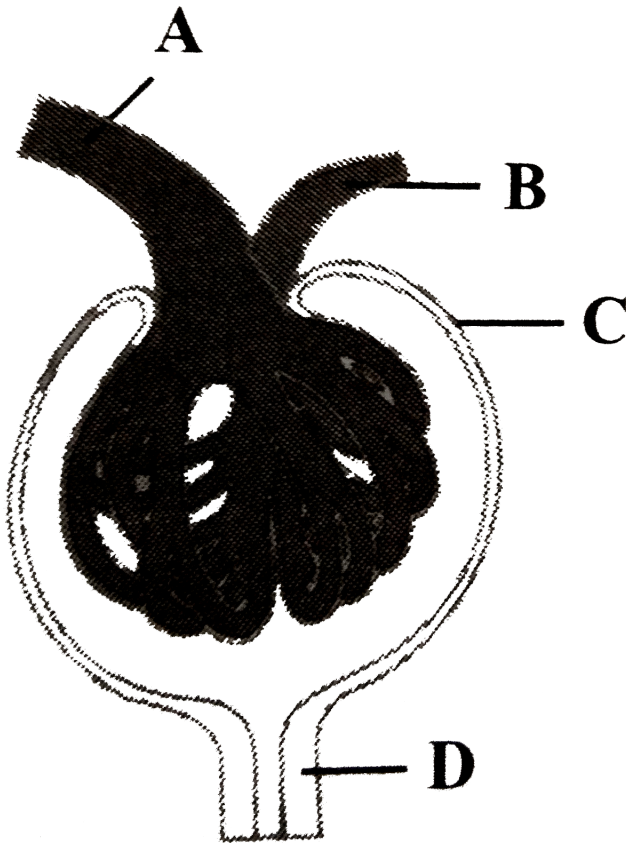
**29.** Which of the following statements is correct?

- A. Malpighian corpuscles and glomerulus constitute the Bowman's capsule
- B. Renal corpuscle and glomerulus constitute Malpighian corpuscle.
- C. Bowman's corpuscles and Malpighian tubules constitute the glomerulus.
- D. Bowman' capsule and glomerulus together constitute renal corpuscle.

**Answer: D**



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30.

The given figure represents the Malpighian body. Identify the labelled parts A to D and select the correct option.

A.

*A*

*B*

*C*

*D*

Efferent arteriole

Afferent arteriole

Bowman's

Proximal convoluted

B.

*A*

Afferent arteriole

*B*

Afferent arteriole

Efferent arteriole

*C*

Renal corpuscle

C.

*A*

Afferent arteriole

*B*

Efferent arteriole

*C*

Bowman's capsule

*D*

Proximal convoluted tubule

D.

*A*

Afferent arteriole

*B*

Efferent arteriole

*C*

Bowman's capsule

*D*

Distal convoluted tubule

**Answer: C**



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**31.** The number of nephrons in a kidney is equal to

A. the number of Bowman's capsules

B. the sum of Bowman's capsules and Malpighian bodies

C. The sum of Bowman's capsules and glomeruli

D. double the number of Bowman's capsules.

**Answer: A**



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**32.** Which of the following statements is correct?

- A. Vasa recta is well developed in cortical nephrons.
- B. PCT and DCT are situated in the medulla of the kidney.
- C. The glomerulus encloses the Bowman's capsule
- D. The ascending limb of the Henle's loop extends as the DCT.

**Answer: D**



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**33.** Which one of the following does not constitute a part of single uriniferous tubule?

A. Distal convoluted tubule

B. Collecting duct

C. Bowman's capsule

D. Loop of Henle

**Answer: B**



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**34.** Match column I with column II and select the correct option from the codes given below.

Column I

A. Delivers blood to glomerulus

B. Carries urine to pelvis

C. Collects filtrate from Bowman's capsule

D. Loop of Henle

Column II

(i). Ascending and descending

(ii). Renal artery

(iii). Collecting duct

(iv). PCT

A. A-(ii),B-(iii),C-(iv),D-(i)

B. A-(i),B-(iii),C-(ii),D-(iv)

C. A-(ii),B-(iv),C-(i),D-(iii)



D. A-(iv),B-(iii),C-(ii),D-(i)

**Answer: A**



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**35.** The dotted appearance of cortex of kidney is due to

- A. ducts of Bellini
- B. convoluted parts
- C. loop of Henle
- D. collecting tubes.

**Answer: B**



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

- A. cortex
- B. pelvis
- C. medulla
- D. none of these

**Answer: A**

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**37. The longest loop of Henle is found in**

- A. kangaroo rat
- B. opossum
- C. rhesus monkey
- D. porcupine.

**Answer: A**

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38. Of the total nephrons, juxtamedullary nephrons constitute.

- A. 0.15
- B. 0.45
- C. 0.65
- D. 0.85

**Answer: A**



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39. Which of the following is the correct sequence of processes involved in urine formation?

- A. Secretion, Reabsorption, Filtration
- B. Filtration, Reabsorption, Secretion
- C. Reabsorption, Filtration, Secretion

D. Reabsorption, Secretion, Filtration

**Answer: B**



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

A. concentrated urine

B. plasma minus blood proteins and blood cells

C. glycogen and water

D. sulphates and water.

**Answer: B**



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**41.** Effective filtration pressure in glomerulus is caused due to

A. powerful pumping action of the heart

B. secretion of adrenaline

C. afferent arteriole is slightly wider than efferent arteriole

D. vacuum develops in proximal convoluted tubule and sucks the blood

**Answer: C**



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

A. 50 mm Hg

B. 75 mm Hg

C. 10 mm Hg

D. 30 mm Hg.

Answer: C



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43. Complete the following paragraph by selecting the option that correctly fills the blanks (i)- (iv) The kidney has built-in mechanisms for the regulation of glomerular filtration rate. One such efficient mechanism is carried out by (i).\_\_\_\_\_ It is a special sensitive region formed by cellular modifications in the (ii).\_\_\_\_\_ and the (iii).\_\_\_\_\_ at the location of their contact. A fall in GFR can activate the JG cells to release (iv).\_\_\_\_\_ which can stimulate the glomerular blood flow thereby bringing GFR back to normal

- A. (i) ANF (ii) PCT (iii) Efferent arteriole (iv) Angiotensin
- B. (i) ANF (ii) DCT (iii) Afferent arteriole (iv) Renin
- C. (i) JGA (ii) PCT (iii) Efferent arteriole (iv) Angiotensin
- D. (i) JGA (ii) DCT (iii) Afferent arteriole (iv) Renin

**Answer: D**



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**44.** 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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**45.** Juxtaglomerular apparatus is made up of

- A. juxtaglomerular cells, macula densa and lacis cells

- B. juxtaglomerular cells, lacis cells and myoepithelial cells
- C. juxtaglomerular cells, macula densa and argentaffin cells.
- D. None of the above

**Answer: A**



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**46.** A large quantity of fluid is filtered everyday by nephrons in the kidneys but only about 1% of it excreted as urine. The remaining 99% of the filtrate

- A. is stored in the urinary bladder
- B. is reabsorbed into the blood
- C. gets collected in the renal pelvis
- D. is lost as sweat

**Answer: B**





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47. Hippuric acid, creatinines and ketonews are added to urine through

- A. selective reabsorption
- B. glomerular filtration
- C. tubular secretion
- D. both b and c

**Answer: D**



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48. The maximum amount of electrolytes and water (70-80 per cent) from the glomerular filtrate is reabsorbed in which part of the nephron?

- A. Ascending limb of loop of Henle
- B. Distal convoluted tubule

C. Proximal convoluted tubule

D. Descending limb of loop of Henle

**Answer: C**



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**49.** Which of the following is removed from the filtrate at loop of Henle?

A. Amino acids

B. Hormones

C. Water

D. Glucose

**Answer: C**



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**50.** Read the given statements and identify the structure referred here.

(i). Reabsorption in this region is minimum.

(ii). This region plays a significant role in the maintenance of high osmolarity of interstitial fluid.

(iii). Its descending limb is permeable to water but almost impermeable to electrolytes.

(iv). Its ascending limb is impermeable to water but allows transport of electrolytes actively or passively.

A. PCT

B. Loop of Henle

C. DCT

D. Bowman's capsule

**Answer: B**



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51. Which of the following statements are correct?

- (i). Renal vein takes blood away from kidney.
- (ii). Urine gets diluted in ascending limb of loop of Henle.
- (iii). Podocyte occur in inner wall of Bowman's capsule.
- (iv). Ultrafiltrate/nephric filtrate is plasma minus proteins.

A. (i) and (ii)

B. (i) and (iii)

C. (iii) and (iv)

D. (i),(ii),(iii) and (iv)

**Answer: D**



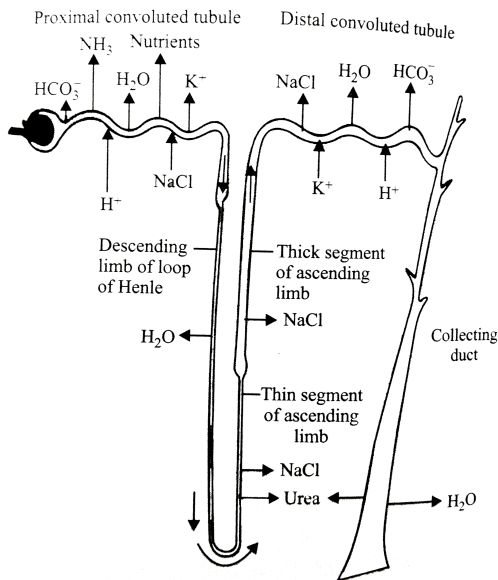
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52. Select the correct option representing the parts of nephron that respectively absorb (i).\_\_\_\_\_ glucose, (ii).\_\_\_\_ amino acids, (iii).\_\_\_\_\_ inorganic ions ( $Na^+$ ,  $K^+$ ,  $Cl^-$ ) and (iv).\_\_\_\_ urea in maximum.

- A. (i) (ii) (iii) (iv)  
 DCT Descending limb of loop of Henle DCT DCT
- B. (i) (ii) (iii) (iv)  
 DCT Descending limb of loop of Henle PCT DCT
- C. (i) (ii) (iii) (iv)  
 PCT PCT PCT Ascending lib of loop of Henle
- D. (i) (ii) (iii) (iv)  
 PCT DCT DCT Ascending limb of loop of Henle

Answer: C

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53.

The given figure shows reabsorption and secretion of major substances

at different parts of the nephron. The movement of which of the following substances is wrongly depicted?

A. NaCl and  $K^+$  at DCT

B. NaCl and  $NH_3$  at PCT

C. NaCl at ascending limb of loop of Henle

D.  $H_2O$  at descending limb of loop of Henle

**Answer: B**



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

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

B. Distal convoluted tubule is incapable of reabsorbing  $Na^+$  ions.

C. Nearly 99 per cent of the glomerular filtrate is reabsorbed by the renal tubules.

D. Ascending limb of loop of Henle is impermeable to electrolytes.

**Answer: C**

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**55.** Excretion of potassium is governed primarily by

A. Potassium reabsorption in proximal convoluted tubule

B. potassium secretion in proximal convoluted tubule

C. potassium secretion in distal convoluted tubule

D. potassium reabsorption in distal convoluted tubule.

**Answer: C**

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56. 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 glomerulus towards renal vein

**Answer: A**



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57. Which of the following statements are correct?

- (i). Reabsorption of water occurs passively in the initial segment of nephron.
- (ii). Nitrogenous wastes are absorbed by passive transport.
- (iii). Conditional reabsorption of  $Na^+$  and water takes place in DCT.
- (iv). DCT reabsorbs  $HCO_3^-$
- (v). DCT is capable of selective secretion of  $H^+$ ,  $K^+$  and  $NH_3$  to maintain pH and  $Na^+ - K^+$  balance in blood.
- (vi). Substance like glucose, amino acids,  $Na^+$ , etc., in the filtrate are reabsorbed actively.

A. (i) and (ii)

B. (ii) and (iii)

C. (iv) and (v)

D. all of these

**Answer: D**



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58. Which of the following is an incorrect match?

- A. Bowman's capsule-Glomerular filtration
- B. DCT-Absorption of glucose
- C. Henle's loop -Concentration of glucose
- D. PCT-Absorption of  $Na^+$  and  $K^+$  ions

**Answer: B**



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59. Long ducts of collecting tubules extend from

- A. cortex to inner part of medulla
- B. medulla to outer cortex
- C. medulla to inner cortex
- D. cortex to outer part of medulla.

**Answer: A**

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**60.** Which of the following options has the correct pair of nephron parts that maintain pH and ionic balance of blood?

- A. Proximal convoluted tubule and Henle's loop
- B. Distal convoluted tubule and collecting duct
- C. Proximal convoluted tubule and glomerulus
- D. collecting duct and Henle's loop

**Answer: B**

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**61.** Which of the following statements is/are incorrect regarding the collecting duct?

(i). It extends from the cortex to medulla.

(ii). Large amount of water could be reabsorbed by it to produce concentrated urine.

(iii). Small amount of urea diffuses into it from the medulla to keep up the osmolarity.

(iv). it plays a role in maintaining pH and ionic balance of blood by the selective secretion of  $H^+$  and  $K^+$  ions.

A. Only (i)

B. Only (iii)

C. (ii) and (iii)

D. (i) and (iv)

**Answer: B**



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**62.** Match column I with column II and select the correct option from the codes given below.

Column I

- A. PCT
- B. DCT
- C. Loop of Henle
- D. Counter current mechanism
- E. Renal corpuscle

Column II

- (i). Minimum reabsorption
- (ii). Filtration of blood
- (iii). Reabsorption of 70-80% electrolyte
- (iv). Ionic balance
- (v). Maintenance of concentration gradient

A. A-(iii),B-(iv),C-(i),D-(v),E-(ii)

B. A-(iii),B-(v),C-(iv),D-(ii),E-(i)

C. A-(i),B-(iii),C-(ii),D-(v),E-(iv)

D. A-(iii),B-(i),C-(iv),D-(v),E-(ii)

**Answer: A**



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

A. The glomerular filtration rate is about 125 ml per minute.

- B. The ultrafiltration is opposed by the colloidal osmotic pressure of plasma.
- C. Aldosterone induces greater reabsorption of sodium
- D. The counter current system contributes in diluting the urine.

**Answer: D**

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**64.** Which of the following statements is incorrect?

- A. Mammals have the ability to produce concentrated urine.
- B. Counter current is due to the flow of filtrate in two limbs of Henle's loop in opposite direction
- C. Henle's loop and vasa recta play a significant role in concentrating the urine.

D. Flow the filtrate through vasa recta also follow the counter current pattern.

**Answer: D**

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**65.** Statement-1: The final reabsorption of water from the urine into the blood occurs through the collecting duct of a mammalian nephron resulting in the production of hyperosmotic urine.

Statement-2: The loop of henle creates a sodium gradient in the interstitial fluid.

- A. both statements 1 and 2 are correct.
- B. Statement 1 is correct but statement 2 is incorrect
- C. Statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect.

**Answer: A**



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**66.** Statement-1: Small amount of urea enters the thick segment of Henle's loop which is transported back to interstitium by collecting tubules.

Statement-2: Collecting tubules and thick segment of Henle's loop are permeable to urea.

- A. both statements 1 and 2 are correct.
- B. Statement 1 is correct but statement 2 is incorrect
- C. Statement 1 is incorrect but statement 2 is correct
- D. Both statements 1 and 2 are incorrect.

**Answer: D**



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**67.** The ability of producing concentrated (hypertonic) urine in vertebrates generally depends on

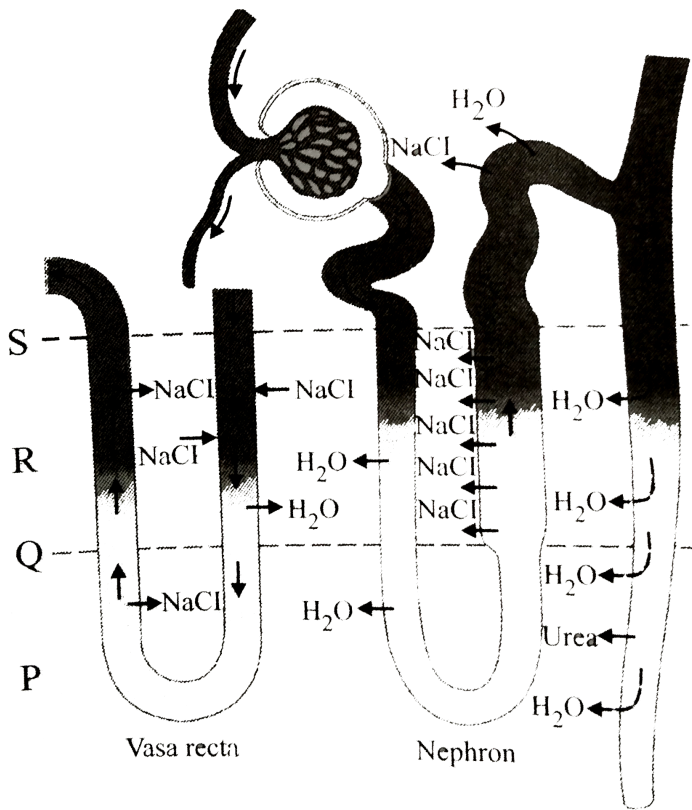


- A. area of Bowman's capsule epithelium
- B. length of the proximal convoluted tubule
- C. length of Henle's loop
- D. capillary network forming glomerulus.

**Answer: C**



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68.

Refer to the given figure and select the correct option representing the osmolarity at P,Q,R and S.

- |    | <i>P</i>                 | <i>Q</i>                 | <i>R</i>                | <i>S</i>                 |
|----|--------------------------|--------------------------|-------------------------|--------------------------|
| A. | $(mOsmolL^{-1})$<br>1200 | $(mOsmolL^{-1})$<br>900  | $(mOsmolL^{-1})$<br>600 | $(mOsmolL^{-1})$<br>300  |
| B. | $(mOsmolL^{-1})$<br>900  | $(mOsmolL^{-1})$<br>1200 | $(mOsmolL^{-1})$<br>300 | $(mOsmolL^{-1})$<br>600  |
| C. | $(mOsmolL^{-1})$<br>300  | $(mOsmolL^{-1})$<br>600  | $(mOsmolL^{-1})$<br>900 | $(mOsmolL^{-1})$<br>1200 |

	$P$	$Q$	$R$	$S$
D.	$(mOsmolL^{-1})$	$(mOsmolL^{-1})$	$(mOsmolL^{-1})$	$(mOsmolL^{-1})$
	1200	300	900	600

**Answer: A**

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**69.** Which of the following statements is incorrect?

- A. ADH helps in water elimination making urine hypotonic
- B. protein free fluid is filtered from blood plasma into the Bowman's capsule
- C. Glucose is actively reabsorbed in the proximal convoluted tubule.
- D. Henle's loop plays an important role in concentrating the urine.

**Answer: A**

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70. Pick the odd ones in each of the following groups and select the correct option

(i). Renal pelvis, Medullary pyramid, Renal cortex, Renal papilla

(ii). Afferent arteriole, Henle's loop, Vasa recta, Efferent arteriole

(iii). Glomerular filtration, antidiuretic hormone, Hypertonic urine, collecting duct

(iv). Proximal convoluted tubule, distal convoluted tubule, Henle's loop, Renal corpuscle

A.

(i)                      (ii)                      (iii)                      (iv)  
Renal pelvis    Henle's loop    Collecting duct    Distal convoluted tubule

B.

(i)                      (ii)                      (iii)                      (iv)  
Renal papilla    Afferent arteriole    Antidiuretic hormone    Henle's loop

C.

(i)                      (ii)                      (iii)                      (iv)  
Medullary pyramid    Efferent arteriole    Hypertonic urine    Proximal convoluted tubule

D.

(i)                      (ii)                      (iii)                      (iv)  
Renal cortex    vasa recta    Glomerular filtration    Renal corpuscle

**Answer: D**



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**71.** Diuresis is the condition in which

- A. the excretory volume of urine increases
- B. the excretory volume of urine decreases
- C. the kidneys fail to excrete urine
- D. the water balance of the body is disturbed.

**Answer: A**



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**72.** Which of the following sequences is correct regarding regulation of kidney function?

- A. An excess loss of water from body → Hypothalamus → Osmoreceptors → Neurohypophysis → ADH → Increases water permeability of DCT and CT → prevention of diuresis
- B. An excess loss of fluid from body → Osmoreceptors → Hypothalamus → Neurohypophysis → ADH → increases water permeability of DCT and CT → Prevention of diuresis
- C. An excess loss of fluid from body → Osmoreceptors → Hypothalamus → Neurohypophysis → aldosterone → water permeability of DCT and CT increases → Prevention of diuresis
- D. An excess loss of fluid from body → Osmoreceptors → Hypothalamus → Adenohypophysis → ADH → Increases water permeability of DCT and CT → Prevention of diuresis

**Answer: B**



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73. Which someone drinks lot of water, ADH release is suppressed.

- A. When someone drinks lot of water, ADH release is suppressed.
- B. Exposure to cold temperature stimulates ADH Release
- C. An increase in glomerular blood flow stimulates formation of angiotensin II.
- D. During summer, when body loses lot of water by evaporation, the release of ADH is suppressed.

**Answer: A**



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74. Consider the following statement each with one or two blanks.

- (i). The ascending limb of loop of Henle is impermeable to (1).\_\_\_but allows transport of (2).\_\_\_\_\_
- (ii). (3).\_\_\_\_\_and (4).\_\_\_\_\_play a significant role is producing a concentrated urine.

(iii). A fall in glomerular blood flow/glomerular blood pressure/GFR can activate the JG cells to release (5).\_\_\_\_\_

Which one of the following options correctly fills the blanks in any two of the statements?

- A. (1)-water, (2)-electrolytes, (5)-renin
- B. (3)-Henle's loop, (4)-vasa recta, (5)-angiotensin
- C. (1)-electrolytes, (2)-water, (3)-PCT, (4)-DCT
- D. (3)-Henle's loop, (4)-vasa recta, (5)-angiotensionogen

**Answer: A**



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**75.** Which of the following sequences is correct?

- A. An increase in body fluid volume → Switch off the osmoreceptors  
→ Suppresses to ADH release



B. ADH → Constricting effect on blood vessel → B.P. high →

More glomerular blood flow → More GFR

C. Angiotensinogen → Angiotensin I → Angiotensin II → Adrenal

cortex → Aldosterone

D. all of these

**Answer: D**



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**76.** The function of renin is

A. stimulation of corpus luteum

B. vasodilation

C. to reduce blood pressure

D. conversion of angiotensinogen to angiotensin-I

**Answer: D**



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77. The reabsorption of the sodium from glomerular filtrate is regulated by the hormone

- A. glucagon
- B. secretin
- C. aldosterone
- D. adrenaline.

**Answer: C**



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78. Angiotensinogen is a protein produced and secreted by

- A. juxtaglomerular (JG) cells
- B. macula densa cells

C. endothelial cells (cells lining the blood vessels)

D. liver cells.

**Answer: D**



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79. In urinary system, aldosterone takes part in retention (reabsorption)

of

A.  $K^+$

B.  $Na^+$

C. water

D. both b and c

**Answer: D**



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

- A. there will be no voluntary control over micturition
- B. urine will continue to collect normally in the bladder
- C. there will be no micturition
- D. urine will collect in urethra.

**Answer: A**



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**81.** Consider the following statement each with two blanks.

- (i). Annelids have (1).\_\_\_and insects have (2).\_\_\_ for excretion.
- (ii). Blood enters the glomerulus via (3).\_\_\_\_arteriole and leaves via (4).\_\_\_arteriole
- (iii). During micturition the urinary bladder (5).\_\_\_\_\_ and the urethral sphincters (6).\_\_\_\_\_

Which one of the following options correctly fills the blanks in any two of the above statements?

- A. (1)-Malpighian tubules, (2)-flame cells, (5)-contracts, (6)-relax
- B. (3)-afferent, (4)-efferent, (5)-contracts, (6)-relax
- C. (1)-nephridia, (2)-Malpighian tubules, (5)-relaxes, (6)-contract
- D. (3)-efferent, (4)-afferent, (5)-relaxes, (6)-contract

**Answer: B**



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**82.** Consider the following four statements (i).(iv) and select the option that correctly identifies the true (T) and false (F) ones.

- (i). Micturition is carried out by a reflex.
- (ii). ADH helps in water elimination making the urine hypotonic.
- (iii). Protein-free fluid is filtered from blood plasma into the bowman's

capsule.

(iv). Glucose is actively reabsorbed in the proximal convoluted tubule.

A. (i) (ii) (iii) (iv)  
*T F T T*

B. (i) (ii) (iii) (iv)  
*T T F F*

C. (i) (ii) (iii) (iv)  
*F F F T*

D. (i) (ii) (iii) (iv)  
*F T F T*

**Answer: A**



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**83.** The outline of principal events of urination is given below in random manner.

(i). Stretch receptors on the wall of urinary bladder send signals to the CNS.

(ii). The bladder fills with urine and becomes distended.

(iii). Micturition.

(iv). CNS passes on motor messages to initiate the contraction of smooth

muscles of bladder and simultaneous relaxation of urethral sphincter.

The correct sequence of the event is

- A. (i) → (ii) → (iii) → (iv)
- B. (iv) → (iii) → (ii) → (i)
- C. (ii) → (i) → (iv) → (iii)
- D. (iii) → (ii) → (i) → (iv)

**Answer: C**



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**84.** The yellow colour of urine is due to the presence of

- A. urea
- B. uric acid
- C. urochrome
- D. bilirubin

**Answer: C**



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**85.** Which one of the following is correct for a normal human?

A. pH of urine is around 8

B. On an average, 75-80 mg of urea is excreted via urine per day.

C. Presence of ketone bodies in urine is an indicator of diabetes mellitus

D. Relaxation of smooth muscles of bladder and simultaneous contraction of urethral sphincter causes release of urine.

**Answer: C**



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**86.** Glycosuria is the condition, where a man



- A. eats more sugar
- B. excretes sugar in urine
- C. sugar is excreted in faeces
- D. has low sugar level in blood.

**Answer: B**



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**87.** A person is undergoing prolonged fasting. His urine would contain abnormal quantities of

- A. fats
- B. amino acids
- C. glucose
- D. ketones

**Answer: D**

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88. A person who is not taking food or beverages will have \_\_\_\_\_ in urine.

- A. little glucose
- B. less urea
- C. excess urea
- D. little fat

**Answer: B**

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89. Read the given statements regarding human excretory system and select the correct ones.

- (i). Presence of glucose in urine is known as uremia.
- (ii). Distal convoluted tubule (DCT) selectively secretes hydrogen ions, ammonia and potassium ions into the filtrate.

(iii). Macule densa is formed by cellular modification in the distal convoluted tubule and the afferent arteriole at their contact location.

(iv). Atrial natriuretic factor (ANF) can cause vasoconstriction when blood flow is low to the atria of the heart.

A. (i) and (ii)

B. (i) and (iii)

C. (ii) and (iii)

D. (iii) and (iv)

**Answer: C**



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**90.** Match column I with column II and select the correct option from the codes given below

**Column I**

A. Lungs

B. Liver

C. Micturition

D. Sweat

E. Vasa recta

F. Sebum

G. ADH

H. Tubular reabsorption

**Column II**

(i). Lactic acid

(ii). Hypertonic urine

(iii). Counter-current system

(iv).  $CO_2$ 

(v). Urinary bladder

(vi). Glucose

(vii). Bilirubin

(viii). Sterols

A. A-(iv),B-(vii),C-(v),D-(i),E-(iii),F-(viii),G-(ii),H-(vi)

B. A-(iii),B-(i),C-(iv),D-(viii),E-(ii),F-(v),G-(vii),H-(vi)

C. A-(iv),B-(viii),C-(i),D-(vi),E-(v),F-(iii),G-(ii),H-(vii)

D. A-(vii),B-(i),C-(iv),D-(iii),E-(viii),F-(vi),G-(v),H-(ii)

**Answer: A****Watch Video Solution**

**91.** Consider the following four statements (i-iv) and select the option that correctly identifies the true (T) and false (F) ones.

(i). Atrial natriuretic factor can cause vasodilation (dilation of blood

vessels) and thereby decreases the blood pressure.

(ii). On an average, 60-70 gm of urea is excreted out per day.

(iii). Sebaceous glands eliminate certain substances like NaCl, urea and lactic acid through sebum.

(iv). PCT is lined by simple cuboidal brush border epithelium which increases the surface area for reabsorption.

A. (i) (ii) (iii) (iv)  
*F F T T*

B. (i) (ii) (iii) (iv)  
*F T T T*

C. (i) (ii) (iii) (iv)  
*T F F T*

D. (i) (ii) (iii) (iv)  
*T T F T*

**Answer: C**



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**92.** Which of the following statements are correct?

(i). Glucose has high threshold value.

(ii). Urine is concentrated in Henle's loop

(iii). Haemodialyser removes urea, uric acid, glucose and plasma proteins

(iv). In glomerulus, urea, uric acid, water, glucose and plasma proteins.

(iv). In glomerulus, urea, uric acid, water, glucose and plasma proteins are filtered out.

A. (i),(iii) and (iv)

B. (ii), (iii) and (iv)

C. (i) and (ii)

D. (i) and (iii)

**Answer: C**



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**93.** In peritoneal dialysis

A. the blood is removed from the body and a natural filter is used

B. the blood is not removed from the body and a natural filter is used

C. the blood is not removed from the body and an artificial filter is used

D. the blood is removed from the body and an artificial filter is used.

**Answer: B**



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**94.** Match column I with column II and select the correct option from the

codes

given

below

ItBrgt

Column I

Column II

A. Uremia

(i). Ketone bodies in urine

B. Ketonuria

(ii). Artificial kidney

C. Glycosuria

(iii). Glucose in urine

D. Blood dialyser

(iv). Accumulation of urea in blood

A. A-(iii),B-(iv),C-(i),D-(ii)

B. A-(iv),B-(i),C-(iii),D-(ii)

C. A-(i),B-(iv),C-(ii),D-(iii)

D. A-(ii),B-(i),C-(iv),D-(iii)

**Answer: B**



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**95.** Which one of the following is correct with reference to haemodialysis?

- A. Absorbs and resends excess of ions
- B. The dialysis unit has a coiled cellophane tube
- C. Blood is pumped back through a suitable artery after haemodialysis
- D. Nitrogenous wastes are removed by active transport

**Answer: B**



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**96.** An X-ray of the lower abdomen shows a shadow in the region of the ureter suspected to be a ureteric calculus. A possible clinical symptom would be



A. acute renal failure (ARF)

B. anuria and haematuria

C. motor aphasia

D. chronic renal failure (CRF)

**Answer: B**



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**97.** What will happen if one kidney is removed from the body of a human poisoning

A. Uremia and death

B. Stoppage of urination

C. the person will survive

D.

**Answer: D**

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**98.** Renal calculi refers to the condition in which

- A. Tumour is present in renal pelvis
- B. stone is formed in kidney
- C. infection occurs in the pelvis region
- D. urea accumulates in the blood.

**Answer: B**

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**99.** Glomerulonephritis is

- A. inflammation of glomeruli of kidney
- B. inflammation of liver
- C. presence of stone in glomeruli of kidney

D. tumour in glomeruli of kidney

**Answer: A**



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**100.** Which one of the following is not normally excreted in urine?

A. Uric acid

B. Haemoglobin

C. ketone bodies

D. Hipuuric acid

**Answer: B**



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**101.** Which of the following will lead to an increase in glomerular fluid filtration in the kidneys?

- A. An increase in the protein concentration in the plasma.
- B. An increase in the fluid pressure in Bowman's space.
- C. An increase in the glomerular capillary blood pressure
- D. A decrease in the glomerular capillary blood pressure

**Answer: C**



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**102.** Which is true about the difference between cortical and juxtamedullary nephrons?

- A. Most nephrons are juxtamedullary.
- B. The efferent arterioles of cortical nephrons give rise to most of the vasa recta

C. The afferent arterioles of the juxtamedullary nephrons give rise to most of the vasa recta.

D. Juxtamedullary nephrons generate a hyperosmotic medullary interstitium.

**Answer: D**

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**103.** If a healthy man drinks one litre of water on occasion A and one litre of 0.9% saline on occasion B, what shall we expect in two hours?

Occasion A		Occasion B		
A.	Volume of urine	Concentration of $Na^+$ in urine	Volume of urine	Concentration of $Na^+$ in urine
	+++	+	+	+++

Occasion A		Occasion B		
B.	Volume of urine	Concentration of $Na^+$ in urine	Volume of urine	Concentration of $Na^+$ in urine
	+++	+	+	+

Occasion A		Occasion B		
C.	Volume of urine	Concentration of $Na^+$ in urine	Volume of urine	Concentration of $Na^+$ in urine
	++	++	++	+++

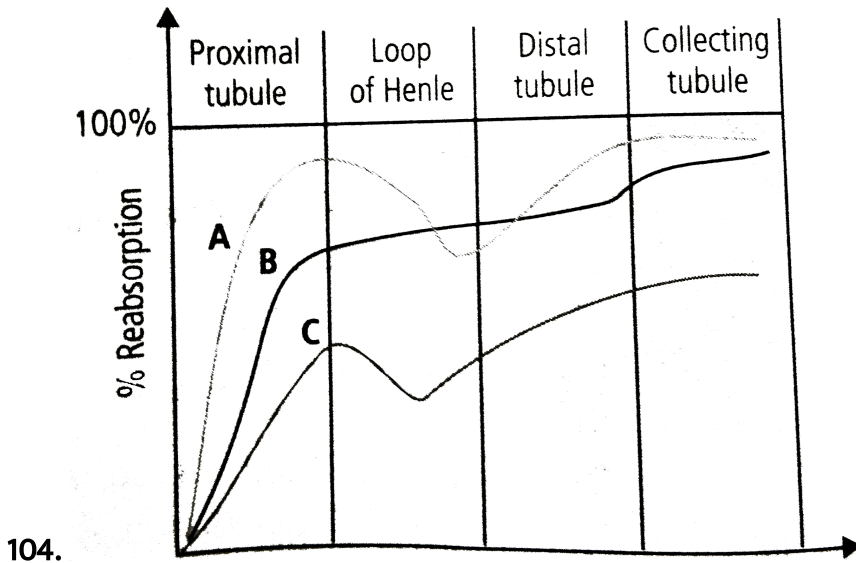
Occasion A

Occasion B

D.	Volume of urine	Concentration of $Na^+$ in urine	Volume of urine	Concentration of $Na^+$ in urine
	+++	++	+++	+++

Answer: B

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104. The accompanying figure shows reabsorption of some constituents of glomerular filtrate in different parts of mammalian nephron. What can these constituents be?

A.  $A - Na^+$ ,  $B - \text{Water}$ ,  $C - \text{Urea}$

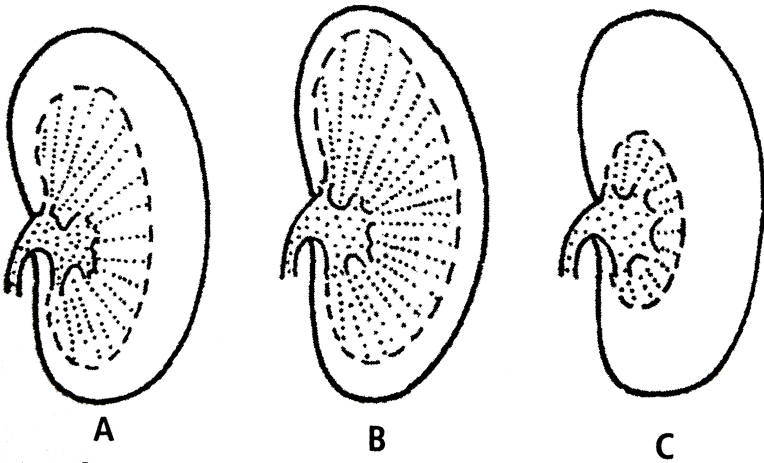
B. A-Urea, B -  $Na^+$ , C-Water

C. A-Water , B- $Na^+$ ,C-Urea

D. A- $Na^+$  ,B-urea, C-water

Answer: A

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The diagrams shows vertical sections of kidneys of coypu, brown rat and kangaroo rat, showing the relative size and are never short of water to drink. Brown rats are able to go some days without drinking. Kangaroo

rats are able to live in deserts without drinking at all. Which kidney belongs to which animal.?

- A. *A*            *B*            *C*  
Brown rat    Coypu    Kangaroo rat
- B. *A*            *B*            *C*  
Brown rat    Kangaroo rat    Coypu
- C. *A*            *B*            *C*  
Kangaroo rat    Brown rat    Coypu
- D. *A*            *B*            *C*  
Kangaroo    Coypu    Brown rat

**Answer: B**



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**106.** 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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**107.** Filtration of the blood takes place at

A. PCT

B. DCT

C. collection ducts

D. Malpighian

**Answer: D**



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

A.  $CO_2$  only

B.  $H_2O$  only

C.  $CO_2$  and  $H_2O$

D. Ammonia

**Answer: A**



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109. The pH of human urine is approximately

A. 6.5

B. 7

C. 6

D. 7.5

**Answer: C**

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**110.** 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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**111.** 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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**112.** 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. Blomerulus alongwith 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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**113.** The condition of accumulation of urea in the blood is termed as

- A. renal calculi
- B. glomerulonephritis
- C. uremia
- D. ketonuria.

**Answer: C**



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114. 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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115. Match the terms given in column I with their physiological processes given in column II and choose the correct answer.



- A. A-(iii),B-(v),C-(iv),D-(ii),E-(i)
- B. A-(iii),B-(iv),C-(i),D-(v),E-(ii)
- C. A-(i),B-(iii),C-(ii),D-(v),E-(iv)

D. A-(iii),B-(i),C-(iv),D-(v),E-(ii)

**Answer: B**

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116. 

Match the abnormal conditions given in column A with their explanation given in column B and choose the correct options.

A. A-(i),B-(iii),C-(ii),D-(iv)

B. A-(iii),B-(ii),C-(iv),D-(i)

C. A-(iv),B-(iii),C-(ii),D-(i)

D. A-(iv),B-(ii),C-(iii),D-(i)

**Answer: C**

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117. 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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118. Dialysing unit (artificial kidney) contains a fluid which is almost same as plasma except that it has

- A. high glucose
- B. high urea
- C. no urea



D. high uric acid

**Answer: C**



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**119.** Assertion: Sharks are said to be ammonotelic animals.

Reason: Sharks can retain considerable amounts of ammonia in their blood.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: D**



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**120.** Assertion: Nephrons are of two types: cortical and juxtamedullary according to their relative position in the cortex.

Reason, Juxtamedullary nephrons have short loop of Henle while cortical nephrons have long loop of Henle.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: C**



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**121.** Assertion: Vasa recta is absent or highly reduced in cortical nephrons.

Reason: Cortical nephrons are mainly concerned with concentration of urine.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: C**



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**122.** Assertion: Glomerular filtration requires expenditure of energy by kidney.

Reason: Glomerular filtration occurs because pressure in the glomerular capillaries is lower than the pressure in Bowman's capsule

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: D**

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**123.** Assertion: Tubular secretion removes foreign bodies ions and molecules from the body.

Reason: As much as 99 per cent of the material in the filtrate is reabsorbed from the body because of tubular secretion.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. If both assertion and reason are true but reason is not the correct explanation of assertion.
- C. If assertion is true but reason is false
- D. If both assertion and reason are false.

**Answer: C**



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**124.** Assertion: In the descending limb of loop of Henle the urine is hypotonic, 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 and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: D**



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**125.** Assertion: DCT and collecting duct maintain the pH and ionic balance of blood.

Reason: DCTs of many nephrons open into a collecting duct.

- A. If both assertion and reason are true and reason is the correct explanation of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false

D. if both assertion and reason are false.

**Answer: B**

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**126.** Assertion: The Henle's loop and vasa recta play a significant role in producing a concentrated urine.

Reason: The counter current arrangement of Henle's loop and vasa recta helps in this.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false

D. if both assertion and reason are false.

**Answer: A**



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**127.** Assertion: Antidiuretic hormone (ADH) controls the amount of water in the urine.

Reason: ADH determines the permeability of the collecting duct to water.

A. If both assertion and reason are true and reason is the correct explanation of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false

D. if both assertion and reason are false.



**Answer: A**



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**128.** Assertion: Angiotensin II increases the glomerular blood pressure thereby GFR.

Reason: Angiotensin II activates the JG cells to release renin.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: C**



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**129.** Assertion: Stimulation of renin secretion will increase the volume of the extracellular fluid (ECF).

Reason: The increased ECF occurs due to decreased active reabsorption of  $Na^+$

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: C**



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**130.** Assertion: The kidneys have built in mechanisms for the regulation of glomerular filtration rate (GFR).

Reason: ANF mechanism is one such efficient mechanism.

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: C**



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**131.** 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 reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: C**



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**132.** Assertion: Renal threshold of glucose is said to be 180 mg/100 mL

Reason: Glucose starts appearing in the urine when its blood level exceeds 180 mg/100 mL of blood

- A. If both assertion and reason are true and reason is the correct explanation of assertion
- B. if both assertion and reason are true but reason is not the correct explanation of assertion.
- C. if assertion is true but reason is false
- D. if both assertion and reason are false.

**Answer: A**



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**133.** Assertion: Liver is referred to as the primary excretory organ in vertebrates.

Reason: Liver helps kidneys in the secretion of urine.

- A. If both assertion and reason are true and reason is the correct explanation of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false

D. if both assertion and reason are false.

**Answer: D**



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