Excretory Products and Their Elimination

Chapter 19

FACT/DEFINITION TYPE QUESTIONS

1. Uricotelic mode of passing out nitrogenous wastes is found in
(a) reptiles and bird
(b) birds and annelids
(c) amphibians and reptiles
(d) insects and amphibians

2. Ammonia is the main nitrogenous excretory material in
(a) amphibians (b) turtles
(c) tadpoles (d) reptiles

3. Mechanism of uric acid excretion in a nephron is
(a) osmosis (b) diffusion
(c) ultrafiltration (d) secretion

4. Why bony fishes, aquatic amphibian and aquatic insects are called ammonotelic animals?
(a) They excrete ammonia as their excretory product.
(b) They excrete ammonia as a least toxic nitrogenous waste product.
(c) They excrete uric acid in the form of pellet and paste with a minimum loss of water.
(d) These animals have nephridia as their excretory organ which helps to remove nitrogenous waste and maintain a fluid and ionic balance.

5. Excretion of nitrogenous waste product in semi-solid form occur in
(a) amniotes (b) desert animals
(c) ureotelic animals (d) uricotelic animals

6. The projections of renal pelvis are called
(a) hiluses
(b) calyces
(c) medullary pyramids
(d) renal columns

7. The number of nephrons in a kidney is equal to
(a) the number of Bowman's capsules.
(b) sum of Bowman's capsules and glomeruli.
(c) double the number of Bowman's capsules.
(d) sum of Bowman's capsules and Malpighian corpuscles.

8. Glomerulus and Bowman's capsule constitute
(a) nephrotome (b) renal corpuscle
(c) renal capsule (d) malpighian tubule

9. In which part of the excretory system of mammals you can first use the term urine for fluid it contains?
(a) Bowman's capsule (b) Loop of Henle
(c) Collecting tubule (d) Ureter

10. Columns of Bertini in the kidneys of mammals are formed as extensions of
(a) Cortex into medulla
(b) Cortex into pelvis
(c) Medulla into pelvis
(d) Pelvis into ureter

11. Blood vessel leading to glomerulus is called
(a) renal artery (b) renal vein
(c) efferent arteriole (d) afferent arteriole

12. Which one of the following is not a part of a renal pyramid?
(a) Loops of Henle
(b) Peritubular capillaries
(c) Convoluted tubules
(d) Collecting ducts

13. The efferent arteriole emerging from the glomerulus forms a fine capillary network around the renal tubule called the _____.
(a) vasa recta (b) loop of Henle
(c) collecting duct (d) peritubular capillaries

14. Juxta-glomerular apparatus is formed by cellular modification in the
(a) afferent arteriole and DCT
(b) efferent arteriole and PCT
(c) afferent arteriole and PCT
(d) efferent arteriole and DCT

15. Which of the following accessory excretory structure eliminates NaCl, lactic acid and urea?
(a) Kidney (b) Liver
(c) Sebaceous gland (d) Sweat gland

16. Which of the following components of blood does not enter into the nephron?
(a) Urea (b) Water
(c) Glucose (d) Plasma protein

17. Kidney helps in the conservation of useful materials and excretion of wastes and therefore they receive 20% of the heart's output of blood (as much as the heart and brain combined). On a percentage basis which substance is most completely reabsorbed by the kidneys?
(a) Water (b) Glucose
(c) Urea (d) Sodium

18. The site and principal mechanism for the passage of glucose into the bloodstream in the human kidney is the
(a) collecting duct, by active secretion.
(b) distal convoluted tubule, by passive diffusion.
(c) glomerulus, by selective reabsorption.
(d) proximal convoluted tubule, by selective reabsorption.

19. The part of the nephron impermeable to water is
(a) proximal tubule
(b) distal tubule
(c) ascending limb of Henle's loop
(d) collecting duct

20. Reabsorption of chloride ions from glomerular filtrate in kidney tubule occurs by
(a) active transport (b) diffusion
(c) osmosis (d) brownian movement

21. Colloidal osmotic pressure in blood plasma is mainly due to
(a) albumin (b) globulin
(c) fibrinogen (d) sodium chloride

22. The ascending loop of Henle is permeable for
(a) ammonia (b) glucose
(c) sodium (d) water

23. Loop of Henle takes part in absorption of
(a) potassium (b) glucose
(c) water (d) urea

24. In comparison to blood plasma, percentage of glucose in glomerular filtrate is
(a) higher (b) equal
(c) lower (d) nil

25. Glomerular filtration rate (GFR) in a healthy individual is approximately
(a) 100 ml/minute, i.e., 180 liters per day.
(b) 125 ml/minute, i.e., 180 litres per day.
(c) 120 ml/minute, i.e., 100 litres per day.
(d) 130 ml/minute, i.e., 120 litres per day.

26. The maximum reabsorption of useful substances back into the blood from filtrate in a nephron occurs in
(a) PCT (b) Loop of Henle
(c) DCT (d) collecting duct

27. A fall in glomerular filtration rate (GFR) activates
(a) adrenal cortex to release aldosterone.
(b) adrenal medulla to release adrenaline.
(c) juxta - glomerular cells to release renin.
(d) posterior pituitary to release vasopressin.

28. The part of the nephron that helps in active reabsorption of sodium is
(a) bowman's capsule
(b) distal convoluted tubules
(c) ascending limb of Henle's loop
(d) proximal convoluted tubules

29. Which region of the kidney nephron is the main site of amino acid reabsorption?
(a) Glomerulus
(b) Bowman's capsule
(c) Proximal convoluted tubule
(d) Distal convoluted tubule

30. Which of the following hormone is secreted from kidney ?
(a) ANF (b) Erythropoietin
(c) Rennin (d) Aldosterone

31. Which of the following is directly responsible for increasing glomerular blood pressure and hence GFR?
(a) Aldosterone (b) ANF
(c) Angiotensin II (d) Renin

32. In the renal tubules the permeability of the distal convoluted tubule and collecting duct to water is controlled by
(a) aldosterone (b) vasopressin
(c) growth hormone (d) renin

33. The function of renin is
(a) degradation of angiotensinogen
(b) stimulation of corpus luteum
(c) to reduce blood pressure
(d) vasodilatation

34. Volume of urine is regulated by
(a) aldosterone
(b) aldosterone and ADH
(c) aldosterone, ADH and testosterone
(d) ADH alone

35. The hormone that promotes reabsorption of water from glomerular filtrate is
(a) oxytocin (b) vasopressin
(c) calcitonin (d) relaxin

36. Juxta-glomerular cells of renal cortex synthesizes an enzyme called
(a) ADH (b) oxytocin
(c) renin (d) urochrome

37. Which one is an important constituent of renin angiotensinogen-aldosterone system?
(a) JGA cell (b) Macular cell
(c) Erythropoetin (d) Plasma cell

38. The voluntary response to the distension of urinary bladder is
(a) polyurea (b) micturition
(c) mellitus (d) menstruation

STATEMENT TYPE QUESTIONS

39. Which of the following statement is correct?
(a) Vasa recta is not present in cortical nephrons.
(b) Maximum number of nephrons in kidney are juxta-medullary type.
(c) DCT of many nephrons open into collecting tubule.
(d) All of the above

40. Which of the following statement is not correct with respect to human kidney?
(a) The peripheral region is called cortex and central medulla.
(b) Malpighian capsules are present in the cortex region.
(c) Blood enters glomerulus through efferent arterioles.
(d) The concave part of kidney is called hilus.

41. If Henle's loop were absent from mammalian nephron which of the following event 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.

42. Almost all the aquatic animals excrete ammonia as the nitrogenous waste product. Which of the following statement 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 as and when formed.
(d) Ammonia gets converted into a less toxic form called urea.

43. Which one of the following statements in regard to the excretion by the human kidneys is correct?
(a) Ascending limb of Loop of Henle is impermeable to electrolytes.
(b) Descending limb of Loop of Henle is impermeable to water.
(c) Distal convoluted tubule is incapable of reabsorbing HCO_3^-.
(d) Nearly 99 per cent of the glomerular filtrate is reabsorbed by the renal tubules.

44. Which one of the following statements is correct with respect to kidney's function and regulation?
(a) During summer when body loses lots of water by evaporation, the release of ADH is suppressed.
(b) When someone drinks lot of water, ADH release is suppressed.
(c) Exposure to cold temperature stimulates ADH release.
(d) An increase in glomerular blood flow stimulates formation of Angiotensin II.

45. Which of the following statement is correct regarding urine formation?
(a) Filtration and reabsorption takes place before secretion.
(b) Filtration and secretion takes place before reabsorption.
(c) Secretion takes place before reabsorption and filtration.
(d) Reabsorption takes place before filtration and secretion.

46. Which of the following statement is incorrect?
(a) Counter-current flow of blood in vasa recta helps to retain the reabsorbed sodium in the renal medulla.
(b) Glomerular filterate is protein free plasma.
(c) Vasa recta carry glomerular filterate from distal convoluted tubule to the collecting duct.
(d) Glomerular filterate in Bowman's capsule is isotonic to the plasma.

47. 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 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)

48. Which of the following statements is/are true?

(i) Urine is hypertonic in distal convoluted tubule.

(ii) When the urine passes into the collecting tubule, it becomes hypotonic.

(iii) Urine is isotonic in proximal convoluted tubule.

(iv) Urine becomes more and more hypotonic as it passes through the Henle's loop.

(a) (i) and (iv) only (b) (i), (ii) and (iii) only

(c) (ii) and (iii) only (d) (iii) only

ASSERTION/REASON TYPE QUESTIONS

In the following questions, a statement of Assertion is followed by a statement of Reason.

(a) If both Assertion and Reason are true and the Reason is the correct explanation of the Assertion.

(b) If both Assertion and Reason are true but the Reason is not the correct explanation of the Assertion.

(c) If Assertion is true but Reason is false.

(d) If both Assertion and Reason are false.

49. **Assertion :** Aquatic animals like whales and seals are said to be ureotelic animals.

Reason : It is because of the fact that their main nitrogeneous waste product is urea.

50. **Assertion :** Kidney maintains the osmotic concentration of the blood.

Reason : Kidney eliminates either hypotonic or hypertonic urine according to the need of the body.

51. **Assertion :** In the descending limb of loop of Henle, the urine is hypertonic, whereas in ascending limb of loop of Henle, the urine is hypotonic.

Reason : Descending limb is impermeable to sodium, while ascending limb is impermeable to water.

52. **Assertion :** Secreting hypotonic urine is effective in reducing urinary loss of water.

Reason : Hypotonic urine is more concentrated and higher in osmotic pressure than the blood.

53. **Assertion :** Aldosterone is a steroid hormone and is important in the control of sodium and potassium ion concentration in mammals.

Reason : It upgrades sodium ion concentration in the ECF by promoting reabsorption of sodium ions from renal tubules and excretion of potassium ions in urine.

54. **Assertion :** Main constituent of human urine is ammonia.

Reason : If human urine is allowed to stand for some time, it smells strongly of ammonia.

MATCHING TYPE QUESTIONS

55. Match the excretory functions given in column-I with the parts of the excretory system in column-II. Choose the correct combination from the given options.

	Column-I (Function)		**Column-II (Parts of excretory systems)**
A.	Ultra filtration	I.	Henle's loop
B.	Concentration of urine	II.	Ureter
C.	Transport of urine	III.	Urinary bladder
D.	Storage of urine	IV.	Malpighian corpuscle
		V.	Proximal convoluted tubule

(a) A – IV; B – I; C – II; D – III

(b) A – IV; B – III; C – II; D – I

(c) A – V; B – IV; C – I; D – III

(d) A – V; B – IV; C – I; D – II

56. Match the disorders given in column-I with their feature given in column-II and choose the correct option.

	Column-I (Disorders)		**Column-II (Feature)**
A.	Uremia	I.	Excess of protein in urine
B.	Hematuria	II.	Presence of high ketone bodies in urine
C.	Ketonuria	III.	Presence of blood cells in urine
D.	Glycosuria	IV.	Presence of glucose in urine
E.	Proteinuria	V.	Excess of urea in blood

(a) A - V; B -III; C - II; D - IV; E - I

(b) A - IV; B - V; C - III; D - II; E - I

(c) A - V; B -III; C - IV; D - II; E - I

(d) A - III; B -V; C - II; D - I; E - IV

57. Which of the following parts of the nephron given in column I is correctly matched with their functions given in column II?

	Column-I (Parts of the nephron)		**Column-II (Functions)**
A.	Proximal convoluted tubules	I.	Sodium is reabsorbed actively in this region.
B.	Distal convoluted tubules	II.	Sodium and water are reabsorbed under the influence of hormone in this region.
C.	Descending limb	III.	Primary site of glucose and amino acid reabsorption.
D.	Ascending limb	IV.	Major substance reabsorbed here is water by osmosis.

(a) A – I; B – II; C – III; D – IV
(b) A – IV; B – I; C – II; D – III
(c) A – III; B – IV; C – II; D – I
(d) A – III; B – II; C – IV; D – I

58. Which of the following hormone/enzyme is/are correctly paired with its function?
I. Renin – Enzyme that catalyses the formation of angiotensin I.
II. Aldosterone – Regulates water reabsorption at the distal convoluted tubule.
III. Anti-diuretic hormone (ADH) – It is a powerful vasoconstrictor that stimulates the secretion of aldosterone.
IV. Angiotensin II – Promotes reabsorption of sodium at distal convoluted tubule.
(a) Only I (b) Only III
(c) I, II and III (d) II, III and IV

59. Which of the following is correctly matched with its function of a specific part of a human nephron?
(a) Afferent arteriole – Carries the blood away from the glomerulus towards renal vein.
(b) Podocytes – Create minute spaces (slit pores) for the filtration of blood into the Bowman's capsule.
(c) Henle's loop – Reabsorption of the major substances from the glomerular filtrate.
(d) Distal convoluted tubule – Reabsorption of K^+ ions into the surrounding blood capillaries.

60. Select the option which shows correct matching of animal with there excretory organs and excretory product.

	Animal	Excretory organs	Excretory product
(a)	Housefly	Renal tubules	Uric acid
(b)	*Labeo* (Rohu)	Nephridial tubes	Ammonia
(c)	Salamander	Kidney	Urea
(d)	Peacock	Kidney	Urea

61. Select the correct match of the types of organs given in column I with their role in excretion given in column II.

Column I (Types of organ)	Column II (Role in excretion)
A. Lungs	I. Secretes bile-containing substances like bilirubin, biliverdin, cholesterol, degraded steroid hormones, vitamins and drugs.
B. Liver	II. Eliminates water and salts in sweat and substances like sterols, hydrocarbons and waxes through sebum.
C. Skin	III. Remove large amounts of CO_2 (18 litres/day) and also significant quantities of water every day
D. Kidney	IV. Remove wastes (metabolic by-products) and regulate pH, ion concentration, volume and osmolarity of blood

(a) A – I; B – II; C – III; D – IV
(b) A – II; B – I; C – II; D – IV
(c) A – III; B – I; C – IV; D – II
(d) A – IV; B – IV; C – III; D – I

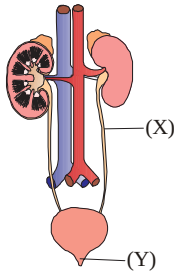
62. Select the correct match of the types of neuron present in column I with its location given in column II.

Column I	Column II
A. Fall in GFR	I. Activate the JG cells to release renin
B. Angiotensin II	II. Increases the glomerular blood pressure and thereby GFR
C. Renin	III. Carries out the conversion of angiotensinogen in the liver to angiotensin I.
D. Aldosterone	IV. Causes reabsorption of Na+ and water from the distal parts of the tubule. This also leads to an increase in blood pressure and GFR.
E. An excessive loss of fluid from the body	V. Activate osmoreceptors which stimulate the hypothalamus to release ADH from the neurohypophysis

(a) A – I; B – II; C – III; D – V
(b) A – III; B – V; C – II; D – I
(c) A – III; B – I; C – IV; D – IV
(d) A – V; B – IV; C – III; D – II

DIAGRAM TYPE QUESTIONS

63. The label X and Y in the given diagram of human urinary system represents



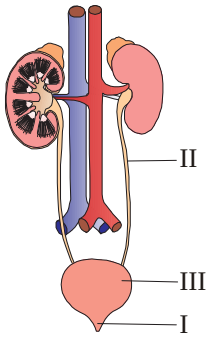
(a) X- Urethra, Y- Ureter

(b) X- Ureter, Y- Urethra

(c) X- Bladder, Y- Urethra

(d) X- Ureter, Y- Bladder

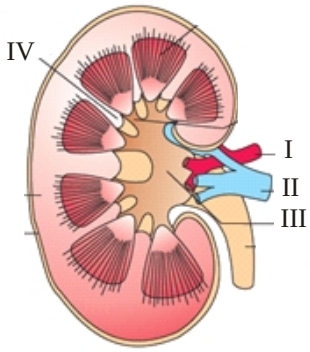
64. Which is the correct order for the path taken by urine after it leaves the kidney?



(a) I → II → III (b) III → I → II

(c) II → III → I (d) II → I → III

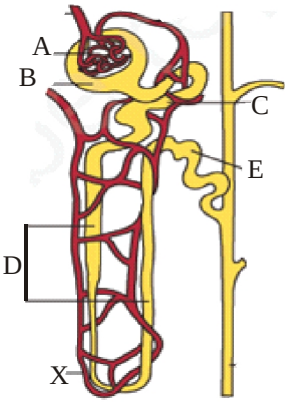
65. The given figure shows the longitudinal section of kidney with few structures labelled as I, II, III & IV identify renal vein in the given figure.



(a) I (b) II

(c) III (d) IV

Directions for (Q. 66 to 68): Refer the given diagrammatic representation of a nephron of human excretory system and answer the following questions.



66. The label X represents _____ that function in _____.

(a) Vasa recta- Reabsorption of water, minerals and digestive end products.

(b) Henle's loop- Filtration of plasma leaving the blood.

(c) Vasa recta- Filtration of plasma leaving the blood.

(d) Henle's loop- Reabsorption of water, minerals and digestive end products.

67. Which blood component would not usually pass through the membranes from region A to region B?

(a) Mineral salts (b) Red blood cells

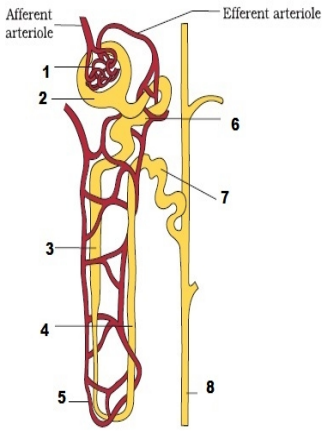
(c) Urea (d) Water

68. After the blood enters the kidney, it travels to the _____.

(a) A (b) B

(c) C (d) D

Directions for (Q. 69 to 72): Refer the given figure of nephron showing blood vessels and duct and answer the questions.



69. Which parts in the above figure have minimum reabsorption and play a significant role in the maintenance of high osmolarity of medullary interstitial fluid?

(a) 1 and 2 (b) 3 and 4

(c) 5 and 6 (d) 7 and 8

70. Cells of which part is lined by simple cuboidal brush border epithelium that increases the surface area for reabsorption? Identify the name also.

(a) 3, Descending limb of loop of Henle

(b) 5, Vasa recta

(c) 6, Proximal convoluted tubule

(d) 7, Collecting duct

71. Which part is capable of reabsorption of HCO3 - and selective secretion of hydrogen and potassium ions and NH_3 to maintain the pH and sodium-potassium balance in blood?

(a) 1 (b) 3

(c) 5 (d) 7

72. Which structures have an ability to produce the concentrated urine?

(a) 1, 2, 3 (b) 3, 4, 5

(c) 6, 7, 8 (d) 2, 4, 7

CRITICAL THINKING TYPE QUESTIONS

73. Workers in deep mines usually suffer from dehydration because
(a) water is lost due to evaporation.
(b) water is lost due to defecation.
(c) water is lost in the form of urine.
(d) water is lost along with salts in the form of sweat.

74. Which of the following sets of animals produce the same substances as their chief excretory product?
(a) Fish, pigeon and frog
(b) Camel, housefly and snake
(c) Frog, monkey and dog
(d) *Amoeba*, ant and antelope

75. Filtration slits are formed by
(a) endothelial lining of glomerular capillaries.
(b) inner epithelium of Bowman's capsule.
(c) basement membrane.
(d) the participation of all of these.

76. The cells named podocytes occur in
(a) inner wall of Bowman's capsule
(b) outer wall of Bowman's capsule
(c) in the wall of glomerulus
(d) in the wall of Henle's loop

77. Ultrafiltration occurs in a glomerulus when
(a) hydrostatic pressure exceeds osmotic pressure.
(b) osmotic pressure exceeds hydrostatic pressure.
(c) capsular hydrostatic pressure exceeds glomerular hydrostatic pressure.
(d) colloidal osmotic pressure plus capsular pressure remain less than glomerular hydrostatic pressure.

78. Filtration fraction is the ratio of
(a) glomerular filtration rate (GFR) to renal plasma flow (RPF)
(b) glomerular filtrate to urine
(c) haemoglobin to oxyhaemoglobin
(d) O_2 to CO_2

79. In a mammalian kidneys, Bowman's capsules occur in __(i)__ while loops of Henle are situated in __(ii)__.
(a) (i) – cortex, (ii) – medulla
(b) (i) – medulla, (ii) – cortex
(c) (i) – cortex, (ii) – pelvis
(d) (i) – pelvis, (ii) – medulla

80. Urine is hypertonic
(a) in Bowman's capsule.
(b) in PCT.
(c) in the middle of descending & ascending limb of Henle's loop.
(d) at the end of ascending limb of Henle's loop.

81. Diuresis is a condition characterized by
(a) increase in urine volume.
(b) increased glucose excretion.
(c) decrease in urine volume.
(d) decrease in electrolyte balance.

82. In nephron water absorption is maximum in
(a) proximal convoluted tubule (PCT).
(b) ascending limb of Henle.
(c) descending limb of Henle.
(d) distal convoluted tubule (DCT).

83. Human urine contains
(a) 95% water, 2.6% urea, 2% salts and some uric acid.
(b) 99% water and 1% urea.
(c) 92% water and 8% salts.
(d) 90% water, 8% uric acid and 2% proteins.

84. Glomerular filtrate contains
(a) blood without blood cells and proteins
(b) plasma without sugar
(c) blood with proteins but without cells
(d) blood without urea

85. __i___ and ___ii___ carries the waste products.
(a) i- Renal artery, ii- Renal vein
(b) i- Renal vein, ii- Urethra
(c) i- Renal vein, ii- Ureter
(d) i- Renal artery, ii-Ureter

86. The urine under normal conditions does not contain glucose because
(a) the normal blood sugar is fructose.
(b) glucose of blood is not filtered in the glomerulus.
(c) glucose in glomerular filtrate is reabsorbed in the uriniferous tubules.
(d) glucose in glomerular filtrate is converted into glycogen.

87. When a person is suffering from poor renal reabsorption, which one of the following will not help in maintenance of blood volume?
(a) increased ADH secretion.
(b) decreased glomerular filtration.
(c) increased arterial pressure in kidneys.
(d) decreased arterial pressure in kidneys.

88. Atrial natriuretic factor (ANF) is released in response to the increase in blood volume and blood pressure. Which of the followings is not the function of ANF? It
(a) stimulates aldosterone secretion.
(b) inhibits the release of renin from JGA.
(c) stimulates salt loss in urine.
(d) inhibits sodium reabsorption from collecting duct.

89. Through the thick segment of ascending limb of Henle's loop the
(a) NaCl can pass by active transport from filtrate to the interstitial fluid.
(b) NaCl can pass by passive transport into interstitial fluid.
(c) NaCl cannot pass from the filtrate to interstitial fluid.
(d) Water can pass freely from filtrate to interstitial fluid.

90. Which of the following is likely to accumulate in dangerous proportion in the blood of a person whose kidney is not working properly?

(a) Ammonia (b) Urea
(c) Lysine (d) Sodium chloride

91. If excess water passes out from tissues without being restored by kidneys, the cells would
(a) burst open and die
(b) not be affected at all
(c) extract water from plasma
(d) shrivel and die

92. There is no sugar in urine. The blood entering the kidney has more sugar than leaving the kidney because
(a) sugar is used by kidney cells in metabolism.
(b) sugar is absorbed by bladder.
(c) sugar is absorbed by proximal convoluted tubule.
(d) sugar is absorbed in Loop of Henle.

93. In human beings the capsular urine entering the Proximal Convoluted Tubule (PCT) is
(a) isotonic to blood
(b) hypotonic to blood
(c) hypertonic to blood
(d) isotonic to sea water

94. If the diameter of afferent renal arteriole is decreased and that of efferent renal arteriole increased, ultra filtration will
(a) be faster
(b) be slower
(c) not take place
(d) take place in the same speed

95. What will happen if the stretch receptors of the urinary bladder wall are totally removed?
(a) There will be no micturition
(b) Urine will not collect in the bladder
(c) Micturition will continue
(d) Urine will continue to collect normally in the bladder

96. In a kidney machine, which of the following passes from the blood to the dialysis fluid?
(a) Glucose (b) Plasma protein
(c) Red blood cells (d) Urea

97. Excretion means
(a) removal of substances which have never been a part of body.
(b) removal of faecal matter from the body.
(c) removal of substances not required in the body.
(d) all of the above.

98. Urine of a human suffering from diabetes inspidus is
(a) concentrated with glucose
(b) concentrated without glucose
(c) watery with glucose
(d) watery without glucose

99. Which one of the following correctly explains the function of a specific part of a human nephron ?
(a) Podocytes : Create minute spaces (slit pores) for the filtration of blood into the Bowman's capsule.
(b) Henle's loop : Most reabsorption of the major substances from the glomerular filtrate.
(c) Distal convoluted tubule : Reabsorption of K^+ ions into the surrounding blood capillaries.
(d) Afferent arteriole : Carries the blood away from the glomerular towards renal vein.

100. Which one of the following enables the mammalian kidney to regulate water reabsorption during states of dehydration?
(a) The cells of the tubules detect the osmotic pressure of the blood.
(b) Water is extracted from the glomerular filtrate in the proximal tubules.
(c) The kidney produces a hypotonic urine.
(d) Hormones increase the permeability of the collecting ducts.

101. If the afferent arteriole that supplies blood to the glomerulus becomes dilated,
(a) the protein concentration of the filtrate decreases.
(b) hydrostatic pressure in the glomerulus decreases.
(c) the glomerular filtration rate increases.
(d) all of the above

102. "X" causes reabsorption of "Y" and water from the distal parts of the tubule. This also leads to an increase in "Z" and glomerular filtration rate (GFR).
Identify X, Y and Z.
(a) X: ADH; Y: Na+; Z: Blood pressure
(b) X: ADH; Y: K+; Z: Blood pressure
(c) X: Aldosterone; Y: Na+; Z: Blood pressure
(d) X: Aldosterone; Y: K+; Z: Ionic concentration

103. Under normal conditions which one is completely reabsorbed in the renal tubule?
(a) Salts (b) Urea
(c) Glucose (d) Uric acid

104. Identify the parts mentioned below which constitute a part of single uriniferous tubule.
i. Loop of Henle.
ii. Collecting duct
iii. Bowman's capsule
iv. Distal convoluted tubule
(a) i, ii and iii (b) ii, iii and iv
(c) i, iii and iv (d) All of the above

105. A patient was diagnosed that one process of his excretory system was not functioning properly due to which his urine is not concentrating.
Identify the organ of the excretory system on which concentration of urine depends.
(a) Collecting duct
(b) Bowman's capsule
(c) Length of loop of Henle
(d) Proximal convoluted tubules

106. Which are the following group of hormones participate in the regulation of the renal function?
(a) ADH, TSH and ANF
(b) PCT, TSH and ANF
(c) ADH, DCT and Aldosterone
(d) ADH, ANF and Aldosterone