

Chapter-08
EXCRETORY PRODUCTS AND THEIR ELIMINATION

Each question carry one score

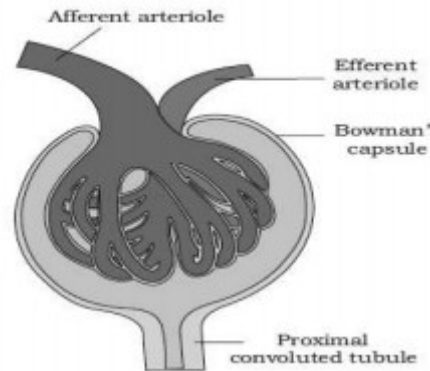
- The following substances are the excretory products in animals. Choose the least toxic among them.
(a) Urea (b) Uric acid
(c) Ammonia (d) Carbon dioxide
- Filtration of the blood takes place at
(a) PCT (b) DCT
(c) Collecting ducts (d) Malpighian body
- Which one of the following statements is incorrect?
(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
- The condition of accumulation of urea in the blood is termed as
(a) Renal calculi (b) Glomerulonephritis
(c) Uremia (d) Ketonuria
- Which one of the following is also known as antidiuretic hormone?
(a) Oxytocin (b) Vasopressin
(c) Adrenaline (d) Calcitonin
- 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
- Write any 2 nitrogenous waste materials excreted by living organism?
- Observe the first pair of words and write a suitable word for the second
- a) Ammonotelic : bony fish Man :
b) Hormone of kidney : erythropoietin
Hormone of heart :
c) ADH : Vasoconstrictor: Vasodilator
d) Ureotelic : man Uricotelic :
- Give one word for the following
a) ionic and fluid volume regulation
b) Organisms excreting uric acid
- In which organ urea cycle operate?

- What are the functional units of kidney?
- Accumulation of urea in blood is called.....
- In Human Kidney Angiotensinogen is converted to Angiotensin-I by
a) Atrial Natri Uretic Factor b) Thyroxine
c) Acetyl choline d) Renin
- Find the odd one and write reason for selection

**Uremia, Renal calculi,
Constipation, Glomerulonephritis**

Each question carry two score

- How JGA regulate the kidney function?
- a) Identify the picture ?



- What is the function of efferent arteriole?
- The composition of glomerular filtrate and urine is not same. Comment.
- Differentiate between cortical nephron and juxta medullary nephron
- Where you can find the following organ
a) Juxta glomerular apparatus
b) Osmoreceptor
- The following abbreviations are used in the context of excretory functions, what do they stand for?
(a) ANF (b) ADH (c) GFR (d) DCT
- Hypothalamus can regulate the kidney function. Evaluate this statement?
- Complete the following:
(a) Urinary excretion =-Tubular reabsorption +Tubular secretion
(b) Dialysis fluid = Plasma - _____
- Expand
a) GFR b) ANF c) ADH d) JGA
- Mention any one metabolic disorders, which can be diagnosed by analysis of urine.

26. What is the advantage of Uricotelic mode excretion ? Write any two examples for uricotelic organisms?
27. Which of the following pairs is wrong?
 (a) Uricotelic—Birds
 (b) Ureotelic—Insects
 (c) Ammonotelic—Tadpole
 (d) Ureotelic—Elephant
28. Some conditions related to kidney disease are given
 • Accumulation of urea in blood.
 • Malfunction of kidney
 a) Name the condition.
 b) In your opinion, suggest the treatments for kidney failure and acute kidney failure ?

29. a) Give one word for the following:

i)	Presence of Glucose in Urine
ii)	Presence of Ketone bodies in Urine

- b) Which human disorder is having the above mentioned two symptoms?
30. What are the 3 important steps in human Urine formation?
31. a) Write the significance of reabsorption in urine formation'
 b) Of the following substances which one is reabsorbed by active transport ?

Glucose, Nitrogenous waste, Water

32. Classify the following animals on the basis of the mode of nitrogenous waste excretion in the table given below

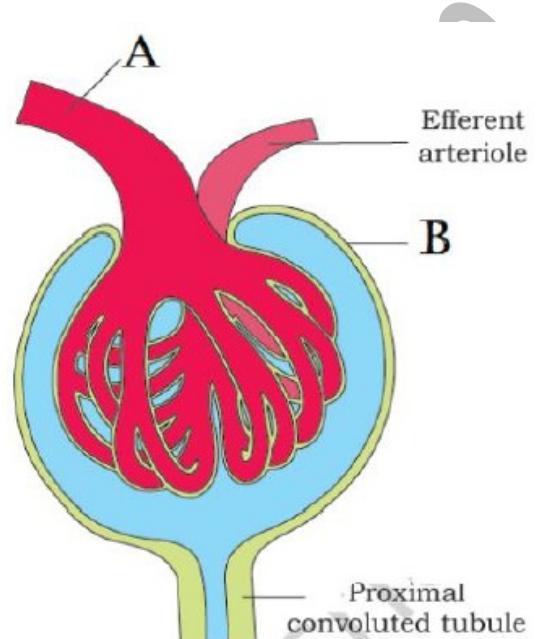
Mammals, Birds, Bony fishes, Reptiles, Terrestrial amphibians, Aquatic amphibians		
Ammonotelic	Ureotelic	Uricotelic

33. In human beings ammonia is produced by metabolism. But humans are not ammonotelic, but Ureotelic explain ?

34. "The functioning of the kidneys is efficiently monitored and regulated by the heart to certain extent"

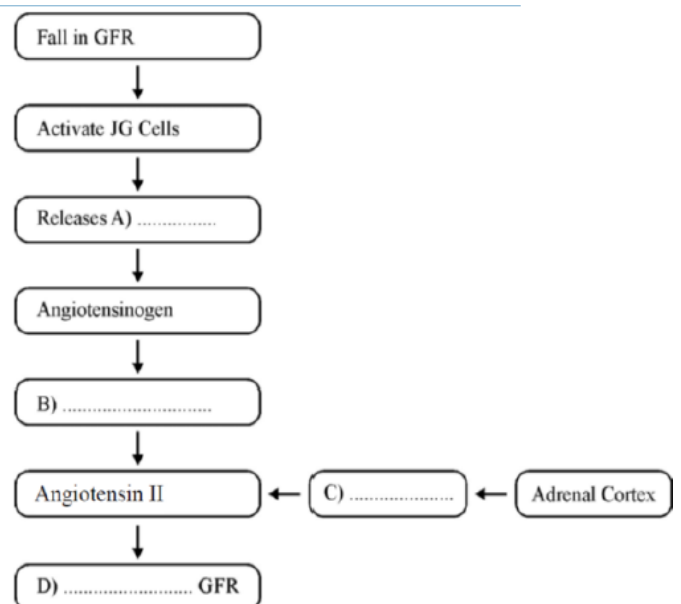
- a) Do you agree with this statement
 b) Justify your answer ?

35. Observe the given diagram of malpighian body (Renal corpuscle) and answer the following



- a) Identify the parts A and B.
 b) Specify the functions of Proximal convoluted tubule in urine formation

36. a) Expand GFR
 b) Even though GFR in a healthy person is 180 liters per day, the amount of urine released Per day is only about 1.5 litres. Give a reason.
37. Complete the flow chart showing the regulation of kidney functioning by Juxta Glomerular Apparatus and Adrenal Cortex



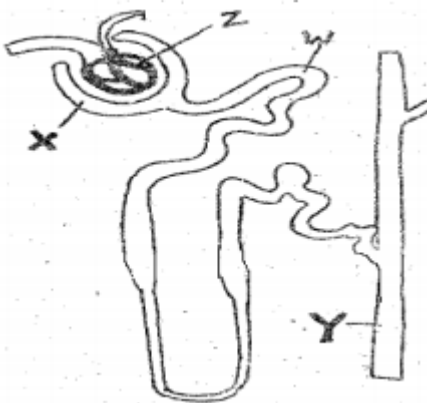
38. Find out the suitable term from the box for the disorders stated.

- (a) Accumulation of Urea in blood.
- (b) Insoluble mass of crystallised salts in the kidney.
- (c) Surgical method for the correction of Renal failures.
- (d) Inflammation of glomeruli of kidney.

39. Why concentration of glomerular filtrate increases as it move from cortex to medulla ?

40. Uricotelism is more advantageous than ureotelism and ammonotelism in strictly terrestrial animals on the basis of water conservation in the body. Justify ?

41. A diagrammatic representation of nephrones is given below



- a) Identify the part labeled as X, Y, Z and W
- b) which part/parts of a nephron constitute malpighian body ?

42. Write any two significance of tubular secretion in urine formation step?

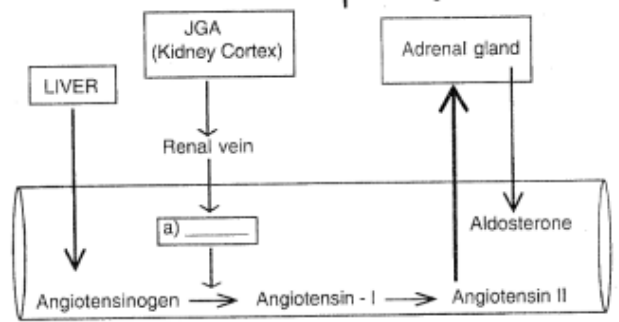
43. In a biology class related to excretion in the human body, a student gave an opinion that in every minute about 2% of total blood volume is converted into GFR whereas only 1% of GFR is eliminated as urine. Evaluate this opinion and substantiate your answer?

44. Observe the schematic diagram showing the mechanism for regulating blood volume

45. What is the significance of urine analysis ?

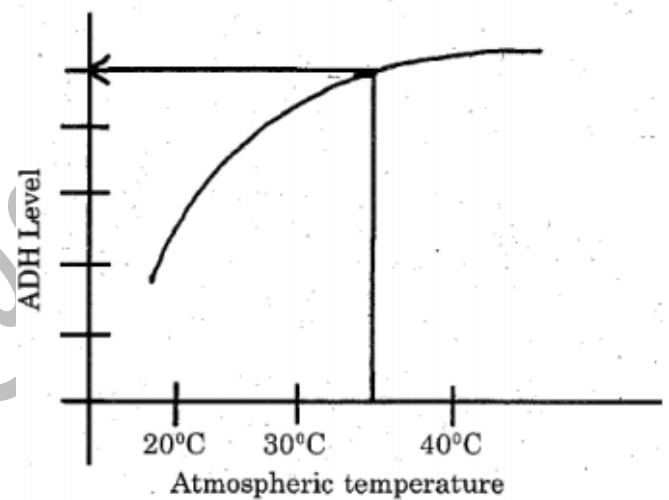
46. Urine analysis of a patient shows that his urine contains abnormally high amount of glucose and ketones

- a) Write one word for it?
- b) what the patient is suffering from?



- a) Fill the gap in 'a' the diagram?
- b) Illustrate how blood volume is regulated by this system ?

47. The output of urine increase in cold days while decreased in hot and sunny days. Can you give the reason for this phenomenon as realized from the graph given below



48. Match the Excretory of section A with parts of the excretory system in section B. Choose the correct combination from among the answer given

Section A (Function)	SECTION B (Parts of excretory system)
A-Ultra filtration	1-Henle's loop
B-Concentration of urine	2-Ureter
C-Transport of urine	3-Urinary bladder
D-Storage of urine	4-Malpighian Corpuscle
	5-PCT

49. How RAAS and ANF function in antagonistic manner ? Explain?

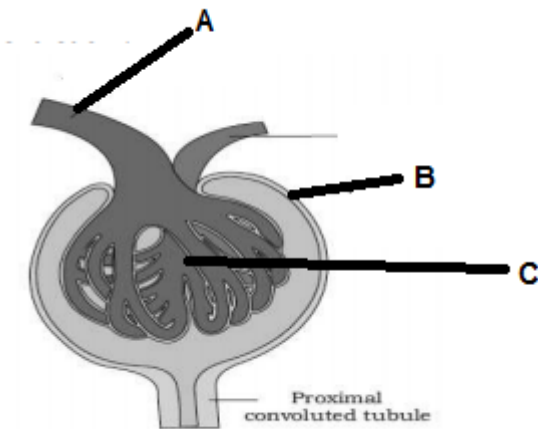
50. Which Hormone prevent Diuresis? What you mean by Diuresis?

51. in your biology class, your biology teacher presented a topic on excretion and said : “The glomerular capillary blood pressure causes filtration of blood through 3 layers”
- What are the 3 layers ?
 - What you meant by glomerular filtrate ?
52. Differentiate between Diabetes mellitus and Diabetes insipidus
53. Match the following

Column A	Column B
A. Glycosurea	Stone or insoluble mass of crystallised salts formed within the kidney.
B. Renal calculi	Glucose in Urine
C. Glomerular nephritis	Excess Urea in blood
D- Uremia	Inflammation of glomeruli of kidney.

Each question carry three score

54. Observe the figure given below and answer the question



- Write the name of the figure?
 - Name the labeled part A ,Band c?
 - which is the site of formation of Glomerular filtrate?
55. Arrange the following , based on the procedure of haemodialysis
- Patient’s artery, adding antiheparin, Dialyzing unit, adding heparin, Patient’s vein**
56. Identify the disease
- Stone or insoluble mass of crystallised salts (oxalates, etc.) formed within the kidney.
 - Inflammation of glomeruli of kidney.
 - Accumulation of urea in blood

- Ketone bodies in Urine
57. The functioning of human kidney is efficiently monitored and regulated by hormonal action of hypothalamus, pituitary, JGA and to certain extent by heart
- Do you agree with this statement ?
 - justify your answer with suitable reason?
58. Teacher lectured in class room that, the volume of urine and Level of ADH are inversely propotional
- Do you agree with this statement ?
 - Explain ?
 - what will be the relationship between level of ADH and temperature ?
59. Match the following

Column I	Column II
(a) Ammonotelism	(i) Birds
(b) Bowman’s capsule	(ii) Water reabsorption
(c) Micturition	(iii) Bony fish
(d) Uricotelism	(iv) Urinary bladder
(e) ADH	(v) Renal tubule

60. Explain the following terms
- Uremia
 - Diuresis
 - Renal calculi
61. Complete the following sentences.
- Reabsorption of water from DCT is facilitated by the hormone.....
 - Angiotensin II activate adrenal cortex to release.....Hormone
 - In case of kidney failure urea can be removed by the process called



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