

Unit - 4

After Metabolism

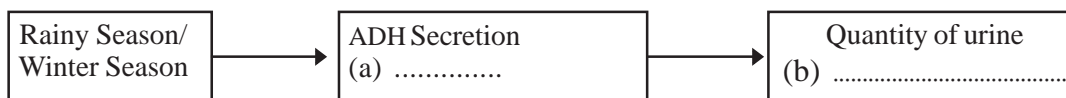
PART - A

Qn : 4 : 1

Complete the illustration :

Time - 1 min

Score -



Qn. 4.2

Major symptoms of a disease are given in the box. Read the symptoms and identify the diseases.

Pain in the lower abdomen, urinary block, backpain, giddiness and vomiting

Time - 1 min

Score - 1

Qn : 4 : 3

Which of the following components is not usually seen in urine sample.

- a) Uric acid
- b) Glucose
- c) Sodium Chloride
- d) Urea

Time - 1 min

Score - 1

Qn : 4 : 4

Find out the relation between the word pair and fill up.

Frog : .Urea:: Tadpole : -

Time - 1 min

Score - 1

Qn : 4 : 5

Find out the word pair relation and fill up :

Cockroach: Malpighian tubule :: Earthworm :

Time - 1 min

Score - 1

Qn: 4 : 6

Find out the word pair relation and fill up. See the given example.

Man : kidney : Urea

Bird : Kidney : a

Lizard : b : Uricacid

Time - 2 min

Score - 1

Qn: 4 : 7

Find out the word pair relation and fill in the blanks.

a) Urea : Kidney :: CO₂ :

Time - 1 min

Score - 1

PART - B

Qn: 4 : 8

Given below are the reactions in the experiment for testing the presence of urea in urine. Fill in the blanks suitably.

a. Sample +→ Milky colour

b. Milky solution +→ Red colour

Time - 1 min

Score - 2

Qn: 4 : 9

From the organs listed below, select those which perform the function of excretion.

Heart

Liver

Lungs

Eye

Small intestine

Pancreas

Skin

Kidneys

Time - 2min

Score - 2

Qn: 4 : 10

Read the observation note prepared by Rahul after observing the picture of a Nephron.

- The afferent vessel which enters the Bowman's Capsule is large, the efferent vessel, that goes out is small.
- Afferent vessel breaks up into very minute capillaries inside the Bowman's capsule.
- Micropores are present on the capillary wall, inside the Bowman's capsule.

Analyse the observation note and find how much the structure of the Bowman's capsule is helpful in performing its function.

Time - 4 min

Score - 2

Qn: 4 : 11

Observe A & B. Find out the conceptual differences between the words in the word pair and note them down.

A

- | |
|---|
| <ul style="list-style-type: none">• Urochrome• Phytochrome |
|---|

B

- | |
|---|
| <ul style="list-style-type: none">• Antibody• Plantibody |
|---|

Time - 3 min

Score - 2

Qn: 4 : 12

Given below is the data from the diary notes of Nabeela during the group discussion on the anatomy of Kidney.

- a) Cortex : the outer part where lakhs of microfilters are seen
- b) Medulla : The part into which the collecting ducts of microfilters open
- c) Pyramid : The part into which urine flows from the filters
- d) Pelvis :

Complete the diary by correcting mistakes, if any, in the explanation of a, b, c and by adding the suitable statement in d.

Time - 3 min

Score - 2

Qn: 4 : 13

Listen to the talk between the friends.

Arjun : "The main reason for our school premises becoming dirty is the careless disposal of food waste"

Farsana : "With a little effort, we can remove waste and also earn income."

Suggest an action plan to make Farsana's suggestion practical.

Time - 3 min

Score - 3

PART - C

Qn: 4 : 14

Redraw the picture and label the parts which perform the following functions:-



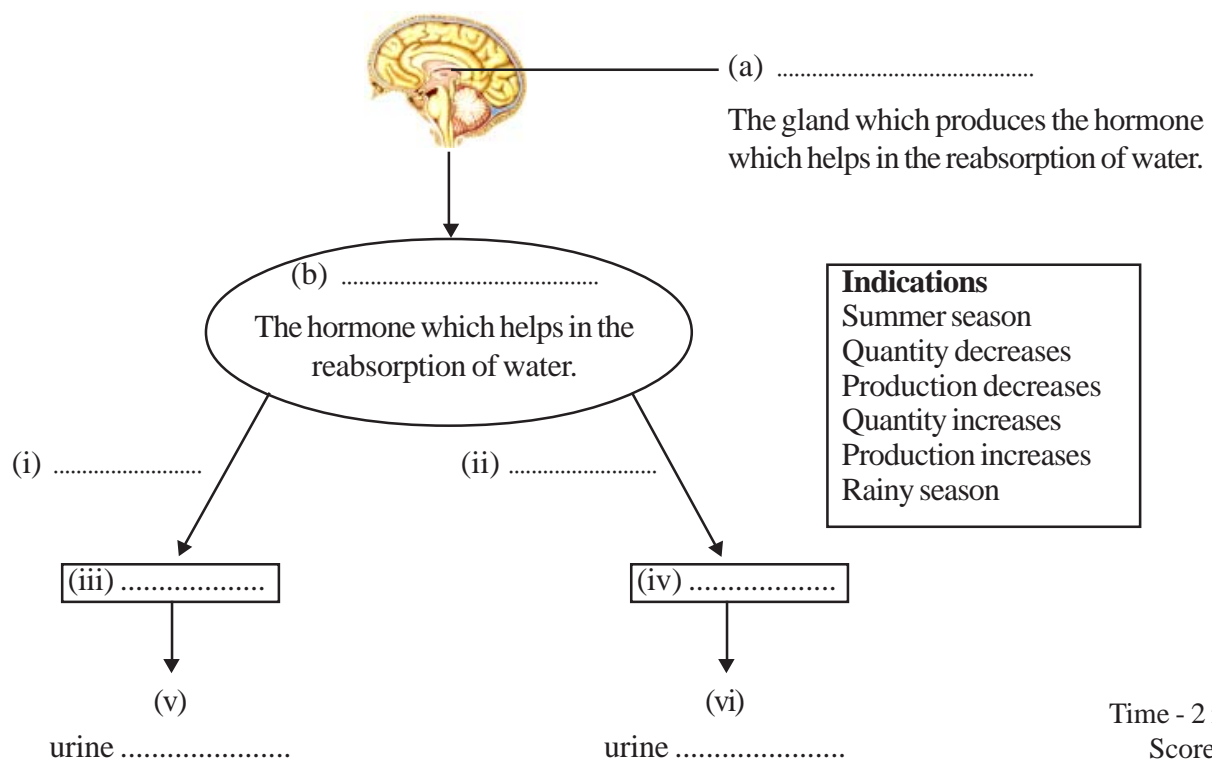
- a) The part where reabsorption of essential substances takes place.
- b) Part which collects glomerular filtrate
- c) Part which collects urine from the nephron.

Time - 3min

Score - 4

Qn: 4 : 15

Fill up suitably. Indications may be utilized for filling up parts (i) to (iv).



Time - 2 min

Score - 4

Qn : 4 : 16

Prepare 3 word pairs selecting from B those suiting the words in A.

A

- a) Nephritis
- b) Kidney stone
- c) Chronic Renal failure

B

- i) Calcium oxalate
- ii) Streptococcus infection
- iii) Diabetes mellitus
- iv) Diabetes insipidus

Time - 2 min

Score - 3

Qn : 4 : 17

Tabulate selecting suitably from A, B and C. Give suitable headings for the columns in the table.

A	B	C
Amoeba	Malpighian tubules	Expels urea
.....	contractile vacuole	Through the pores on body surface
Cockroach	Nephridia	Separate impurities from body fluid and carry them to the alimentary canal
	Kidneys	Excess water is eliminated

Time - 2 min

Score - 3

Qn : 4 : 18

Given below are certain doubts raised in an awareness class in connection with organ donation. Give necessary explanation to these doubts.

1. Kidneys can be donated only after one's death, isn't it?
2. Can the mother's kidney be donated to child?
3. Won't donating kidney create problems to the donor?

Time - 3 min

Score - 3

Qn : 4 : 19

Analyse the given data in boxes A, B, C; find out the diseases and their causes on the basis of symptoms and tabulate them.

A

Symptoms
<ul style="list-style-type: none"> • Pain in the lower abdomen, urinary block, back pain, vomiting. • Dark coloured and turbid urine, back pain and fever; swelling of face, ankles and feet. • Anaemia, weight loss, giddiness, vomiting; Urea and other excretory wastes are not filtered, but retained in the blood itself

B

Diseases
<ul style="list-style-type: none"> • Cirrhosis • Kidney stone • Nephritis • Chronic renal failure

C

Reasons
<ul style="list-style-type: none"> • Cholesterol level becomes high • Diabetes, hypertension • Calcium oxalate and Calcium phosphate get sedimented • Streptococcus infection

Time - 5 min

Score - 3

Qn : 4 : 20

Select those suitable for A from B & C and tabulate.

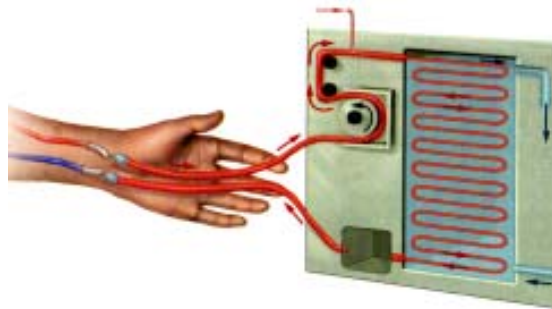
A	B	C
Organism	Excretory Organ	Excretory substance
Fish	Nephridia	Uric acid
Calotes	Contractile vacuole	Ammonia
Frog	Kidney	Urea

Time - 2 min

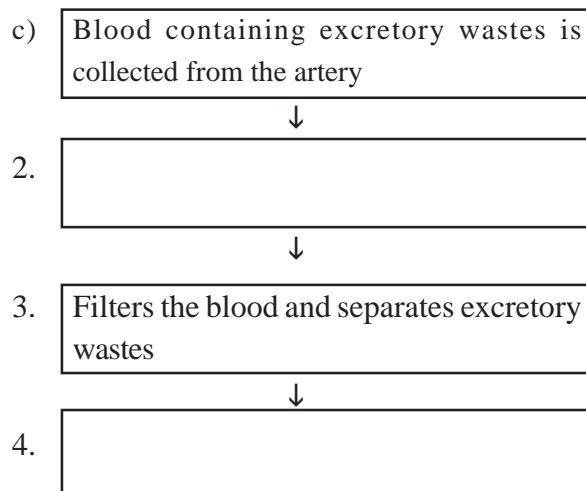
Score - 3

Qn : 4 : 21

Observe the illustration



- Identify what the illustration is.
- In which stage is this required?
- Complete the flowchart regarding this illustration



Time - 3 min

Score - 3

Qn : 4 : 22

More glomerular filtrate is produced during the rainy season in comparison with the summer season. Hence more urine is formed in the rainy season'

This is the answer given by Maya to the question: "How does the change in climate affect urine production?"

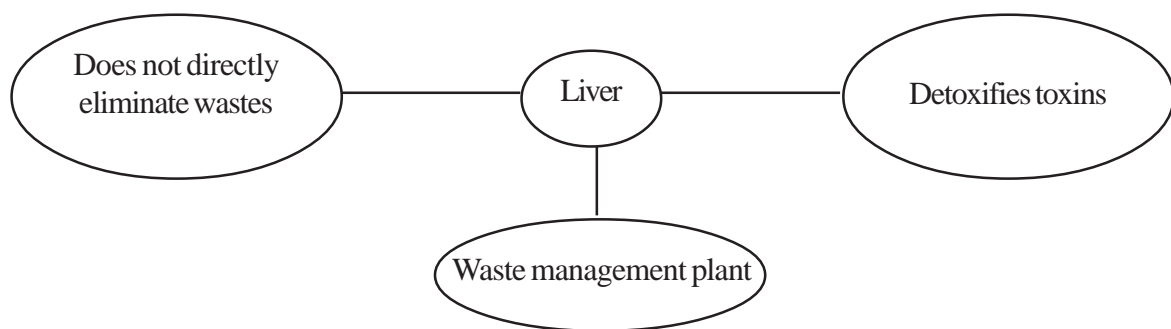
- a) What is the relation between the quantity of urine and production of glomerular filtrate?
- b) What is the normal quantity of glomerular filtrate produced in one minute?
- c) Is the reason given by Maya for the variation in quantity of glomerular filtrate in relation to climate correct? Why?

Time - 3 min

Score - 3

Qn : 4 : 23

Observe the illustration of the function of the liver.



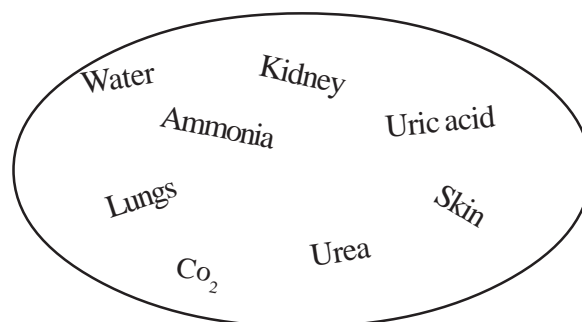
- a) Is liver an excretory organ? Why?
- b) What is the role of liver in maintaining homeostasis?

Time - 3 min

Score - 3

Qn : 4 : 24

The major excretory organs and excretory wastes in man are given. Prepare as many word pairs as possible as in the model given.



Eg: Ammonia - Kidney

Time - 2 min

Score - 3

Qn : 4 : 25

Identify the organ related to the given functions.

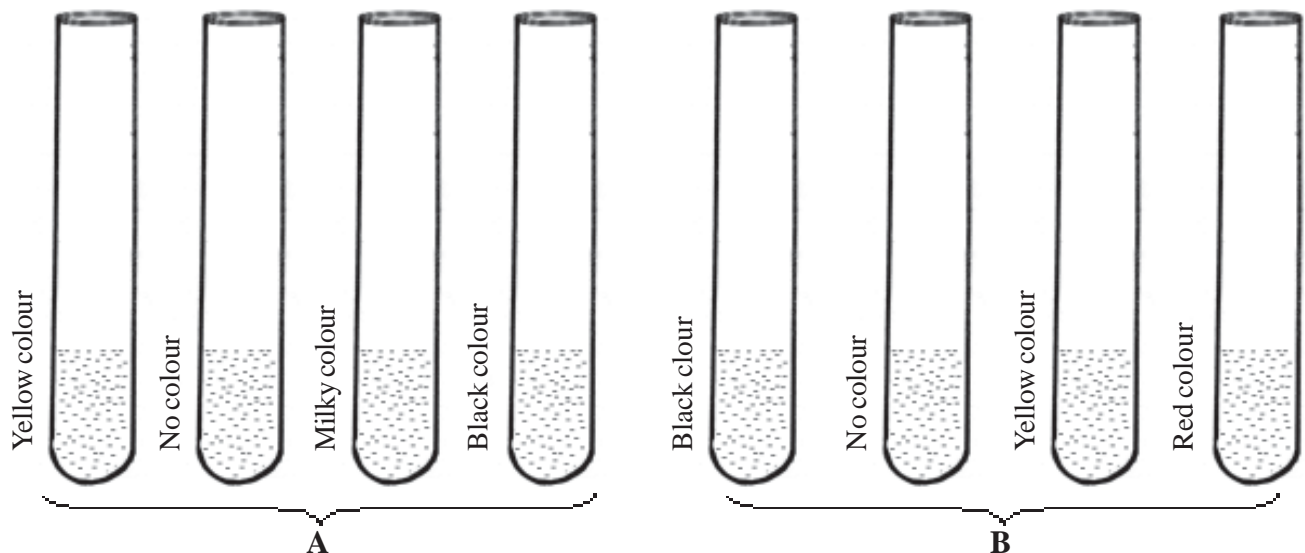
Function	Organ
1. Maintains CO ₂ homeostasis by detoxifying the toxins	(a)
2. Collects Co ₂ and expels it along with water vapour	(b)
3. Water, urea and uric acid are expelled through sweat	(c)

Time - 2 min

Score - 3

Qn : 4 : 26

Observe the picture. Read the description below and find answers to the questions.



Given along with the test tubes of group A are the colours obtained when phenolphthalein is added to the test tubes. Urea is present only in one among the test tubes of group B. Phenolphthalein is added to group A, followed by another chemical to test the presence of urea. The result is what is given in group B.

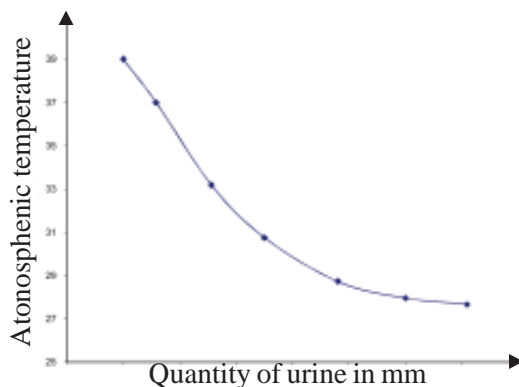
- Which of the group A test tubes contain urea?
- What is the chemical added to the group B test tubes?
- Which of the group B test tubes contain urea?
- What other components, in addition to urea, may be present in urine?

Time - 3 min

Score - 4

Qn : 4 : 27

Given in the picture is a graph drawn by Aryananda showing atmospheric temperature and quantity of urine.



- What does this graph indicate?
- Redraw this graph indicating quantity of ADH secretion.

Time - 5 min

Score - 4

Qn : 4 : 28

As part of testing glucose level in urine, teacher has given test tubes containing different samples to various groups. Given below are the results, after heating it along with Benedicts solution. Observe this and answer the following questions.

Sample	Colour	Inference
Group - 1	Red	a)
Group - 2	Blue	b)
Group - 3	Yellow	Traces of glucose in urine

- Find out inferences a, b and complete the table.
- Which disease's symptom is indicated in the samples seen as yellow and red?
- Explain the reason for this disease.

Time - 5 min

Score - 4

Qn : 4 : 29

Given below is the report of the blood test of a person who came to hospital with symptoms like anaemia, weight loss, giddiness and vomiting.

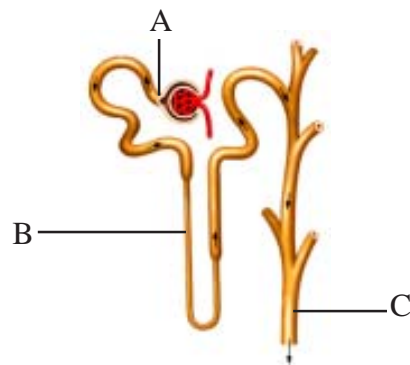
	Test result	Normal Level
Urea	30mg	7 - 20 mg
Uric acid	10mg	2 - 6 mg
Creatinine	6mg	0.8 - 1.2 mg

- What is this disease?
- What method of treatment would you suggest to sustain life of this patient?
- Illustrate the different steps of this treatment in the form of a flowchart.

Time - 5 min

Score - 4

Qn : 4 : 30



- a) Identify the given diagram.
- b) Which is the liquid formed in A?
- c) What is the function of B?
- d) Compare the liquids formed in A and C.

Time - 5 min
Score - 4

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