9 Excretion

Section A

2003-4.

a. Define "deamination" (1 mark)

b. State one substance that is excreted in each of the following excretory organs.

(i) lungs (1 mark)

(ii) kidneys (1 mark)

Section B

2012-11.

a

(i) Name the main nitrogenous waste excreted by kidneys. (1 mark)

(ii) Describe how the nitrogenous waste mentioned in 11.a.(i) is formed. (3 marks)

b. Name **two** substances found in blood plasma that are not found in the urine of a healthy person. (2 marks)

[2010-8]

Figure 6 is a graph showing urine output in a person after drinking 1 litre of water. Use it to answer the questions that follow:

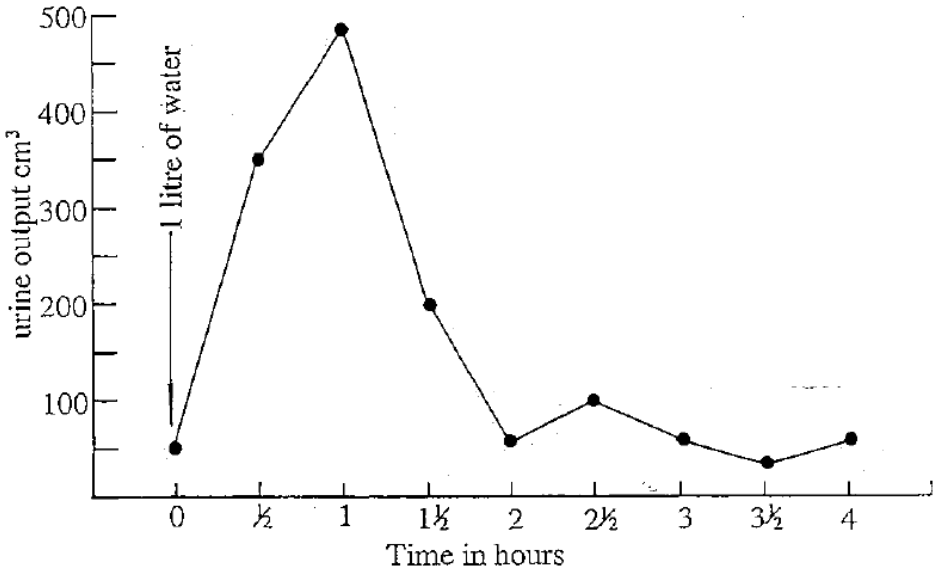

Figure 6

2010-8.

a. What was the maximum amount of urine produced? (1 mark)

b. What effect did drinking of the water have on urine output during the first hour of the investigation? (1 mark)

c. Explain how Anti-Diuretic Hormone (ADH) affected results of urine output between 1 hour and 2 hours. (3 marks)

[2009-7]

Figure 6 shows a dialysis machine. Use it to answer the questions that follow.

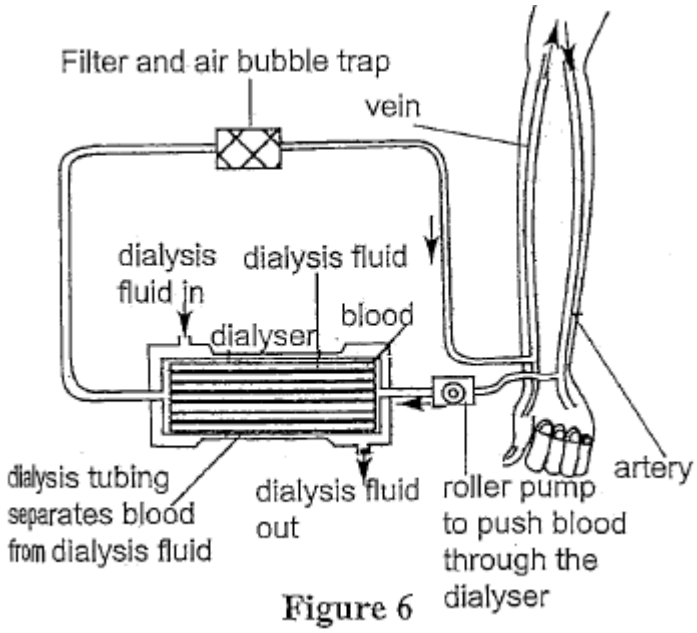

Figure 6

2009-7

a. Explain why patient's blood and the dialysis fluid move to opposite directions in the dialyser. (2 marks)

b. Why are there many smaller channels in the dialyser rather than one large one? (2 marks)

c. Explain why it is dangerous for an air bubble to get into the patient's blood while on the dialysis machine. (2 marks)

[2007-9]

Figure 6 is a section of the kidney. Use it to answer the questions that follow.

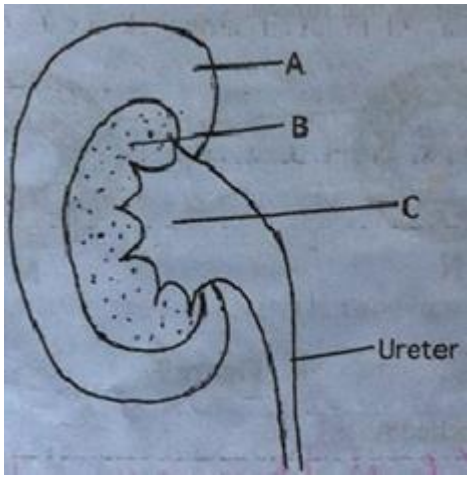

Figure 6

2007-9.

a. Name one structure of the nephron found in each of the following parts of the kidney.

(i) **A** (1 mark)

(ii) **B** (1 mark)

b. What is the function of the part labelled **C**? (1 mark)

c.

(i) What is the effect of an intake of salt solution on urine production? (1 mark)

(ii) Explain how the effect in 9.c.(i) is brought about. (3 marks)

[2006-11]

Figure 8 is a diagram showing part of a nephron. Use it to answer the questions that follow.

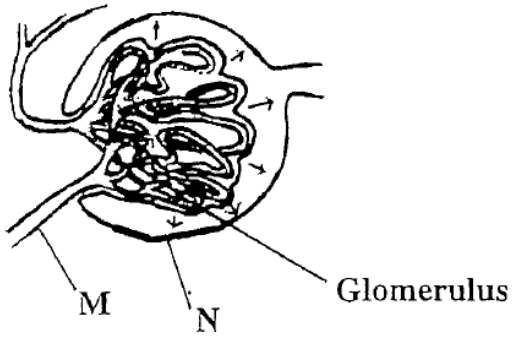

Figure 8

2006-11.

a. Name the parts marked **M** and **N**. (2 marks)

b.

(i) Mention the process represented by the arrows. (1 mark)

(ii) Describe one adaptation of the figure to the process mentioned in b.(i). (2 marks)

c. Give one example of active transport which occurs in the nephron. (1 mark)

[2005-8]

Table 1 shows the composition of human blood and urine. Use it to answer the questions that follow.

Table 1

Substance	Blood (%)	Urine (%)
Water	90	96
Protein	9	0
Glucose	0.1	0
Urea	0.03	2
Uric acid	0.003	0.05
Creatinine	0.001	0.1
Chloride	0.37	0.6
Sodium	0.35	0.35 →0.6
Potassium	0.02	0.15

2005-8.

a.

(i) Give one substance which is present in blood but is completely absent in urine. (1 mark)

(ii) Apart from urea and water, mention two substances which are more concentrated in urine than in blood. (1 mark)

b. Which hormone regulates water concentration in the blood? (1mark)

c. Why is urea excreted in large quantities? (3 marks)

2004-15.

A dialysis machine is an artificial kidney which is used when a person has kidney failure.

a. How is the loss of glucose and other important substances from the blood prevented when a patient is on the dialysis machine? (2 marks)

b. State **one** similarity between the dialysis tube and the tubule of the nephron. (2 marks)

c. Name **two** substances which diffuse out of the dialysis tube when it is in operation. (2 marks)

Section C

2010- 15.

Describe how urine is formed in the kidneys of the human body. Write your answer in an essay form. (10 marks)