Forensic Science – Blood Components

You have been given a booklet of information about blood and its components. You will need a calculator for Question 5. Read each section and then answer the questions below.

1. Describe the composition of blood.

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1. What is the function of blood? Give three examples.

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1. What is the name of the red pigment in a red blood cell? What is its role?

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1. What six main types of components plasma contain?

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1. Calculations about iron in the body. Read the section on Haemoglobin.



1 iron per haem 4 haem per haemoglobin

* 1. Use the information in the text. How many iron atoms are in one haemoglobin molecule? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. How many haemoglobin molecules does it say are in one red blood cell? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. Multiply your answers to (a) and (b) to calculate how many iron atom must be in one red blood cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. Look on page 2. How many red blood cells are there in one litre of blood? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. Calculate how many iron atoms must be in one litre of blood \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Use the values below to estimate the volume of blood in your body \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ L

If you weigh 40kg (6 stone 4lbs) your blood volume is approximately 3.00L,

50kg (7 stone 7lbs) approx. 3.75L blood

60kg (9 stone 6lbs) approx. 4.50L blood

70kg (11 stone) approx 5.25L blood

80kg (12 stone 8lbs) approx. 6.00L blood

* 1. Multiply the number of iron atoms in one litre of blood from part (e) by the number of litres of blood in your body \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_