

Respiration – 2022 November O Level 5090**1. Nov/2022/Paper_11/No.9**

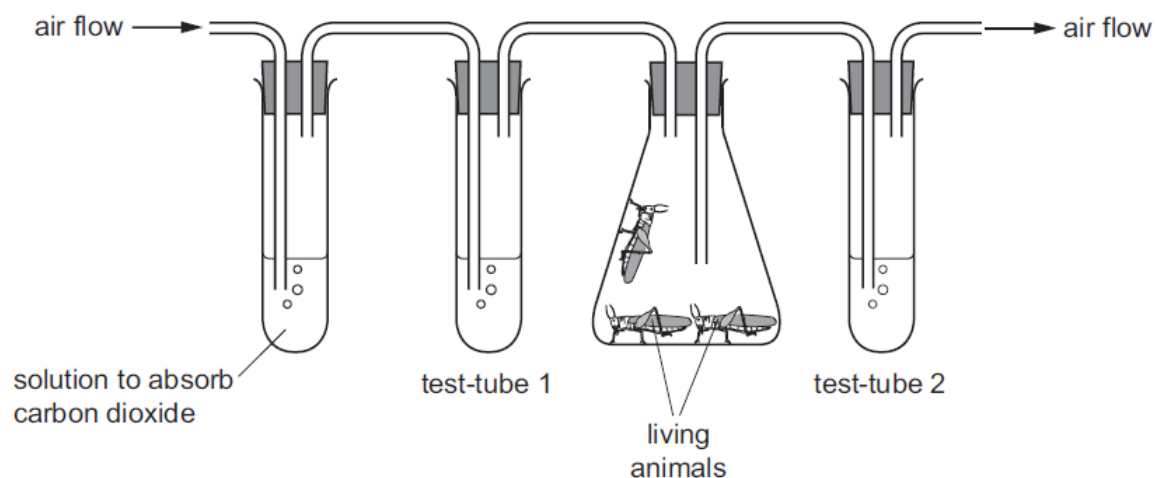
Which row shows the average daily energy requirement for the people in the table?

	7500 kJ	9000 kJ	10 500 kJ	15 000 kJ
A	6-year-old child	pregnant woman	male manual labourer	teenage girl
B	6-year-old child	teenage girl	pregnant woman	male manual labourer
C	teenage girl	6-year-old child	male manual labourer	pregnant woman
D	teenage girl	pregnant woman	6-year-old child	male manual labourer

2. Nov/2022/Paper_11/No.17

An experiment is set up, as shown.

Test-tubes 1 and 2 contain limewater. Limewater is a clear solution that turns cloudy in the presence of carbon dioxide. Air is pumped through the apparatus.



What is the appearance of the limewater in test-tubes 1 and 2 after a period of 10 minutes?

	test-tube 1	test-tube 2
A	clear	clear
B	clear	cloudy
C	cloudy	clear
D	cloudy	cloudy

3. Nov/2022/Paper_11/No.18

Which equation represents anaerobic respiration in yeast?

- A glucose \rightarrow ethanol
- B glucose \rightarrow ethanol + lactic acid
- C glucose \rightarrow lactic acid + carbon dioxide
- D glucose \rightarrow ethanol + carbon dioxide

4. Nov/2022/Paper_12/No.18

Fitness training in athletes reduces the need for anaerobic respiration. It also increases the rate at which lactic acid is removed after exercise.

The table shows the concentration of lactic acid in the blood of four different athletes. They exercise for 20 minutes and rest for the next 70 minutes.

lactic acid concentration / mg per 100 cm ³ of blood				
time (min)	athlete 1	athlete 2	athlete 3	athlete 4
0	20	20	20	20
10	84	82	60	86
20	95	90	85	98
30	92	95	76	99
40	84	80	62	95
50	78	75	50	81
60	66	60	38	68
70	54	50	25	62
80	35	30	20	50
90	28	20	20	39

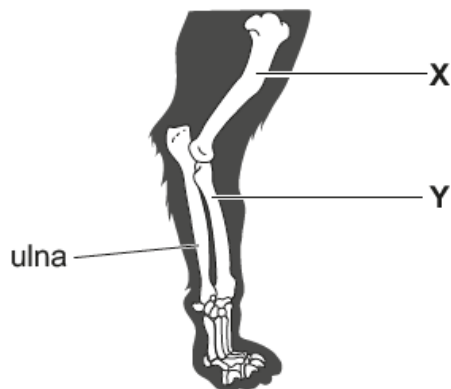
} exercise

From the fittest athlete to the least fit, which order is correct?

- A 3 \rightarrow 2 \rightarrow 1 \rightarrow 4
- B 1 \rightarrow 2 \rightarrow 4 \rightarrow 3
- C 2 \rightarrow 3 \rightarrow 4 \rightarrow 1
- D 3 \rightarrow 1 \rightarrow 2 \rightarrow 4

5. Nov/2022/Paper_21/No.5(a, b)

Lions are carnivorous mammals that hunt their prey.
 The forelimb of a lion has the same basic structure as the arm of a human.
 The diagram shows the bones in the forelimb of a lion.



(a) State the name of:

bone X

the muscle between bones X and Y.

[2]

(b) Lions can only run quickly for a short time. This means they have to get close to their prey before accelerating to maximum running speed.

(i) Name the process used to release energy in the muscles of the forelimb when the lion starts to run after its prey.

..... [1]

(ii) Explain why the lion can only run at maximum speed for a short time.

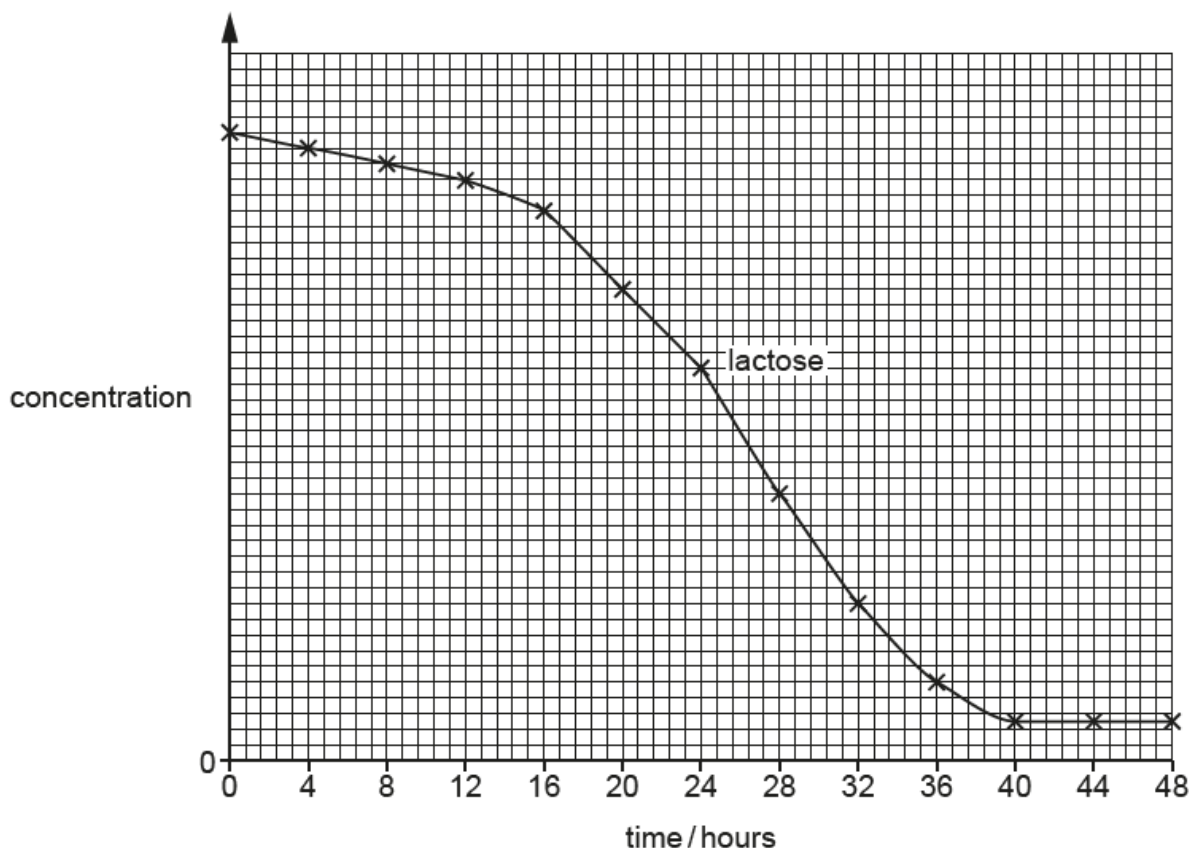
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..... [2]

6. Nov/2022/Paper_22/No.3(a)

The graph shows how the concentration of lactose sugar changes during the formation of yoghurt from milk over a period of 48 hours.



(a) (i) Name the type of microorganism used in the production of yoghurt.

.....

[1]

(ii) Name the type of cell division that causes the population of this microorganism to increase over the 48-hour period.

.....

[1]

(iii) Name the acid produced by this type of microorganism in the formation of yoghurt.

.....

[1]

(iv) Draw a line on the graph to show how the concentration of this acid will change during the 48-hour period.

[2]