



QUESTION WORKBOOK

Exercise, sports medicine and performance-enhancing drugs

Respiration and cellular energy · Unit B12

Edexcel A 7.13, 7.14, 7.15

12 questions · 42 marks

NAVY SCREEN EDITION

Every question in this book has a code beside its number.
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SECTION A · Short, 1 to 2 marks**A1**

ESM-Q1

State two possible disadvantages to health of exercising too much.

[2]

A2

ESM-Q7

In a study constructed for this question, 225 of 1500 runners who finished a marathon reported symptoms of a cold in the following week, compared with 20 of 500 people who entered but did not run. Calculate how many times more likely the finishers were to report symptoms.

[2]

SECTION B · Standard, 3 to 5 marks**B1**

ESM-Q2

Explain how a lack of exercise increases a person's risk of developing type 2 diabetes.

[4]

B2

ESM-Q3

Explain why many years of high-impact training can lead to osteoarthritis of the knee, and why the damage is slow to repair.

[4]

B3

ESM-Q9

A footballer has a torn meniscus repaired by keyhole surgery rather than open surgery. Explain why she is likely to return to training sooner.

[4]

B4

ESM-Q11

Anabolic steroids are lipid-soluble drugs related to testosterone. Explain how they increase muscle mass.

[4]

B5

ESM-Q12

Explain how injecting EPO can improve the performance of an endurance cyclist, and why it is dangerous.

[4]

B6

ESM-Q4

Describe the J-shaped curve proposed to relate the risk of upper respiratory tract infection to the amount of exercise, and give one change in the immune system after intense exercise that could explain it. [3]

B7

ESM-Q8

Using the marathon study in the previous question, suggest three reasons, other than suppression of the immune system by exercise, why the finishers reported more colds. [3]

B8

ESM-Q10

Explain how a carbon-fibre running blade allows an athlete with a lower-leg amputation to sprint. [3]

B9

ESM-Q14

Sleeping in an altitude tent and injecting EPO both raise an athlete's red blood cell count. Suggest why the first is permitted and the second is prohibited. [3]

SECTION C · Long, 6 marks or more

C1

ESM-Q13

Discuss whether athletes should be allowed to use performance-enhancing substances. Refer to different ethical positions in your answer.

[6]

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