PEARSON EDEXCEL GCSE BIOLOGY (HIGHER) · 1BI0

BIOLOGY



EXAM QUESTION PACK

TOPIC 5: HEALTH, DISEASE AND THE DEVELOPMENT OF MEDICINES (PACK 2)

SCORE	PERCENTAGE
/60	%

STEMUP

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Q1.

Figure 1 shows the number of people per million **of the population** in five European countries who were diagnosed with measles in one year.

country	number of people diagnosed with measles per million of the population
Belgium	21.00
France	15.63
Germany	8.42
Italy	20.06
Norway	0.05

Figure 1

(i) The population of Belgium in that year was 11.18 million.

Calculate the number of people in Belgium diagnosed with measles.

Give your answer to three significant figures.

(3)

..... people

(ii) Countries do not report the total number of people diagnosed with measles.
Countries report the number of people diagnosed with measles per million of the population.

Give **one** reason why this is better.

(1)

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(iii) Give **one** reason why the number of people per million diagnosed with measles is different in these countries.

(1)

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(Total for question = 5 marks)

Q2.

Figure 5 shows how alcohol consumption increases the risk of developing liver cancer.

Someone who does not drink alcohol has a 1.0 risk of developing liver cancer.

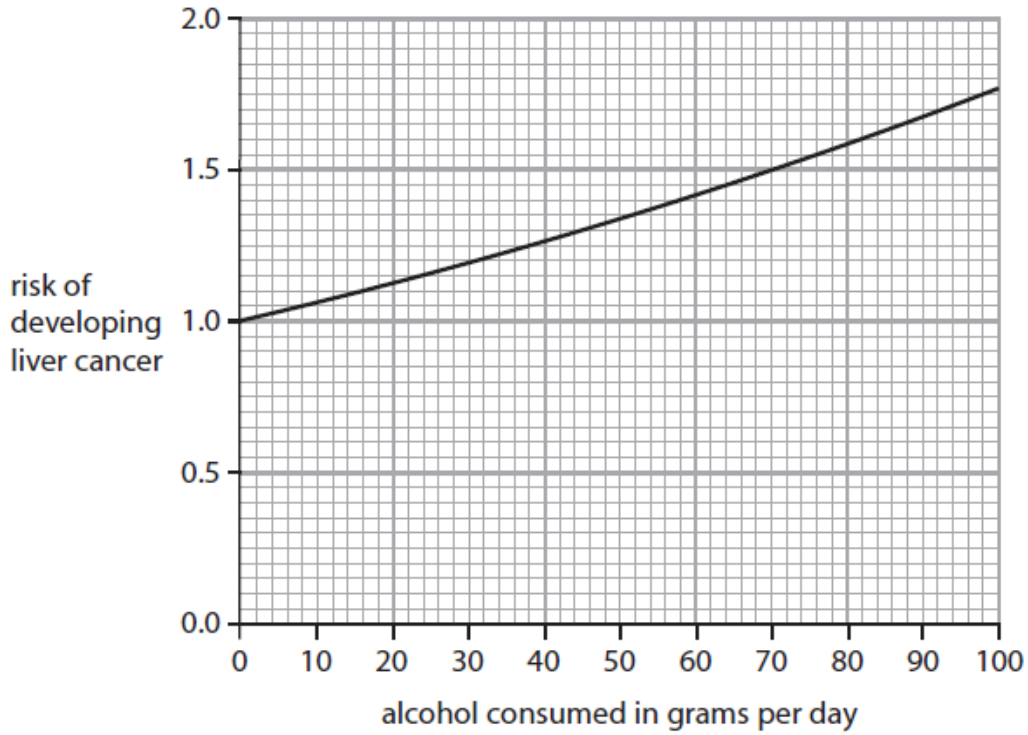


Figure 5

(i) One unit of alcohol contains 8 grams of alcohol.

Calculate the risk of developing liver cancer for someone who consumes 4 units of alcohol a day.

(2)

..... risk of developing liver cancer

(ii) Describe how cancer develops in the liver.

(2)

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(Total for question = 4 marks)

Q3.

A diet that is high in fat can lead to an increase in the total cholesterol levels in the blood.

The table shows the total cholesterol levels in the blood of a man, over a 10-year period.

time	total cholesterol level in blood / mmol per dm^3
10 years ago	4.8
5 years ago	5.1
present day	6.0

(a) (i) Calculate the percentage increase in total cholesterol level in the blood over this 10-year period.

Put a cross (☒) in the box next to your answer.

(1)

☒ **A** 2.0%

☒ **B** 2.5%

☒ **C** 20.0%

☒ **D** 25.0%

(ii) The government recommends that the total cholesterol level in the blood for adults should be 5 mmol per dm^3.

Explain why this man has been advised to eat mycoprotein rather than meat.

(2)

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(b) Describe how mycoprotein is produced.

(3)

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Q4.

Tuberculosis (TB) is a communicable disease.

(i) State **two** ways that communicable diseases are different from non-communicable diseases.

(2)

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(ii) Explain **one** way that the spread of tuberculosis (TB) can be reduced or prevented.

(2)

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(iii) A student researched the number of people with TB in some countries.

Figure 3 shows the student's data.

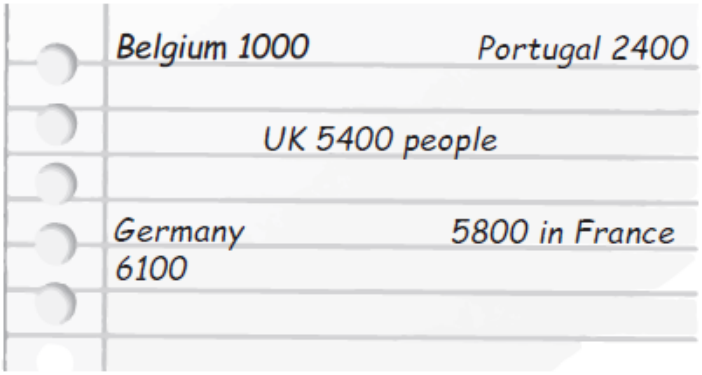


Figure 3

Complete the table to show the student's data.

(2)

(Total for question = 6 marks)

Q5.

Answer the question with a cross in the box you think is correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Cancer Research UK found that many people do not realise that obesity is linked to an increased risk of developing cancer.

In the body, fat tissue sends signals that cause other cells to divide.

(i) Describe how this could cause cancer to develop.

(3)

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(ii) Cell division occurs during the cell cycle.

During which stage of the cell cycle is DNA replicated?

(1)

☒ **A** anaphase

☒ **B** prophase

☒ **C** interphase

☒ **D** telophase

(iii) Obesity is linked to 1 in 20 cases of **all** types of cancer.

Approximately 13% of cases of bowel cancer are caused by obesity.

Determine how the impact of obesity on bowel cancer compares to the impact of obesity on all types of cancer.

(2)

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(Total for question = 6 marks)

Q6.

Answer the question with a cross in the box you think is correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Cancer Research UK found that many people do not realise that obesity is linked to an increased risk of developing cancer.

In the body, fat tissue sends signals that cause other cells to divide.

(i) Describe how this could cause cancer to develop.

(3)

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(ii) Cell division occurs during the cell cycle.

During which stage of the cell cycle is DNA replicated?

(1)

☐ **A** anaphase

☐ **B** prophase

☐ **C** interphase

☐ **D** telophase

(iii) Obesity is linked to 1 in 20 cases of all types of cancer.

Approximately 13% of cases of bowel cancer are caused by obesity.

Determine how the impact of obesity on bowel cancer compares to the impact of obesity on all types of cancer.

(2)

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(Total for question = 6 marks)

Q7.

Viruses can cause disease.

Describe how the lytic pathway is involved in the reproduction of viruses.

(4)

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(Total for question = 4 marks)

Q8.

Describe how the specific immune system defends the body against disease.

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(Total for question = 3 marks)

Q9.

Describe how the specific immune system defends the body against disease.

(3)

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(Total for question = 3 marks)

Q10.

* Some sexually transmitted infections (STIs) can be diagnosed by testing urine samples.

These tests use monoclonal antibodies that bind to an antigen on the pathogen.

Describe how a monoclonal antibody can be developed and used to detect an STI using a urine sample.

(6)

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(Total for question = 6 marks)

Q11.

Cancer Research UK found that many people do not realise that obesity is linked to an increased risk of developing cancer.

In the body, fat tissue sends signals that cause other cells to divide.

Obesity can also cause cardiovascular disease to develop.

Describe the different treatments available for cardiovascular disease.

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(Total for question = 3 marks)

Q12.

Obesity can also cause cardiovascular disease to develop.

Describe the different treatments available for cardiovascular disease.

(3)

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(Total for question = 3 marks)

Q13.

LDL cholesterol is a type of cholesterol which increases the risk of heart disease.

Statins are drugs used to reduce LDL cholesterol levels.

Figure 12 shows the cholesterol levels in the blood of a man.

He started taking statins at the beginning of February and stopped taking them four months later.

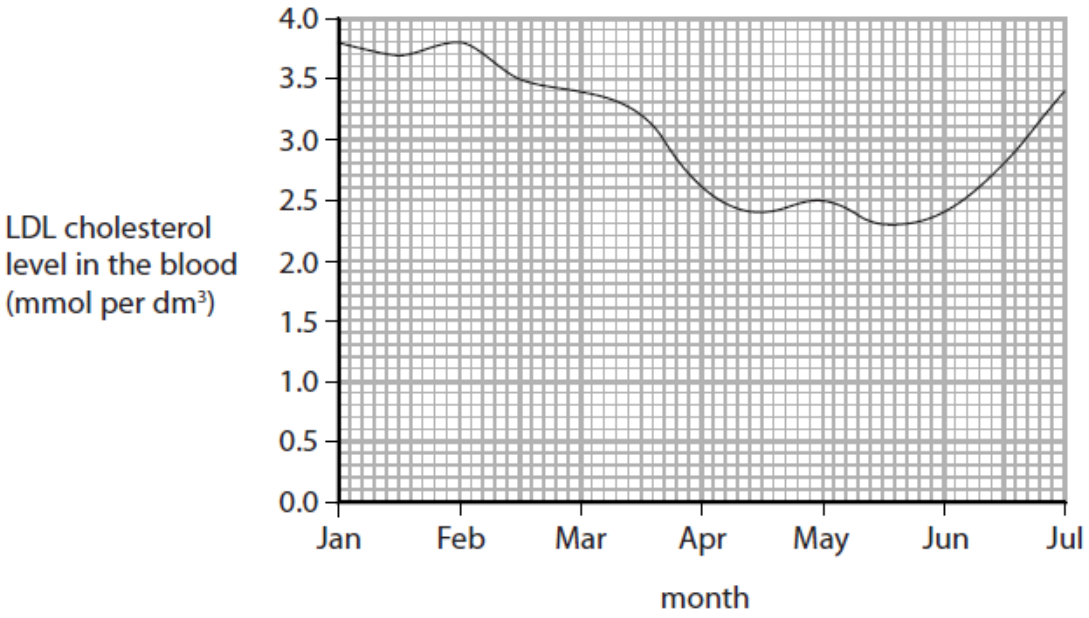


Figure 12

(i) Describe the effect of statins on LDL cholesterol levels in the blood.

Use data from the graph to support your answer.

(2)

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(ii) Use evidence from the graph to explain why statins are usually prescribed as life-long medication.

(2)

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(Total for question = 4 marks)

Q14.

LDL cholesterol is a type of cholesterol which increases the risk of heart disease.

Statins are drugs used to reduce LDL cholesterol levels.

Figure 6 shows the cholesterol levels in the blood of a man.

He started taking statins at the beginning of February and stopped taking them four months later.

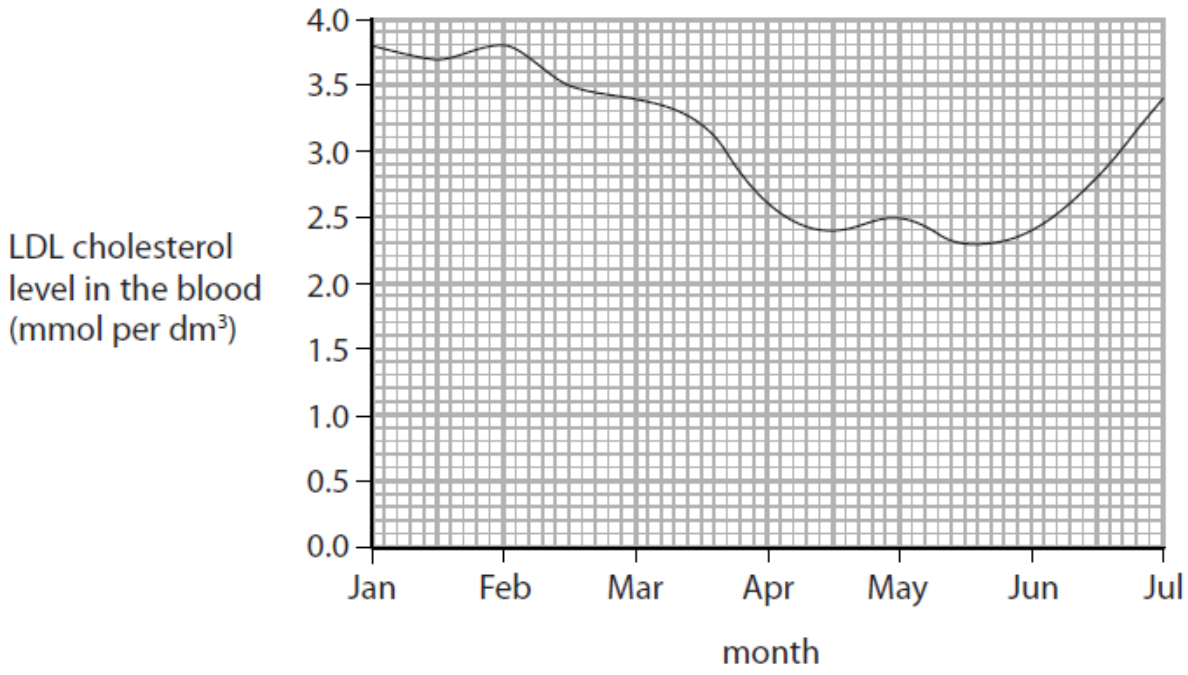


Figure 6

(i) Describe the effect of statins on LDL cholesterol levels in the blood.

Use data from the graph to support your answer.

(2)

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(ii) Use evidence from the graph to explain why statins are usually prescribed as life-long

medication.

(2)

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(Total for question = 4 marks)

Q15.

Measles is a disease caused by a virus.

Describe the lytic pathway for a virus.

(3)

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(Total for question = 3 marks)