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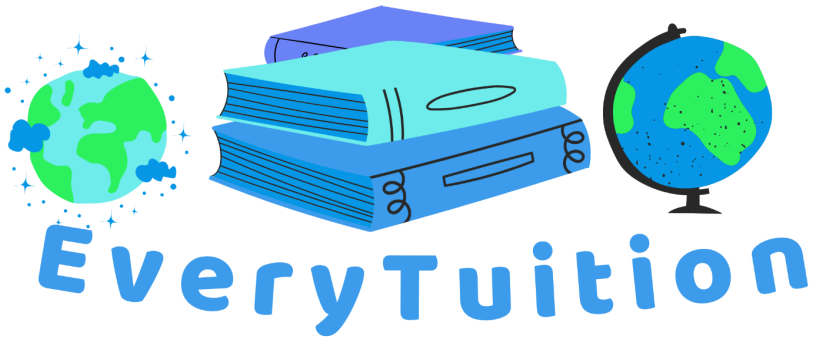
Topic 3 - Infection and Response- AQA Biology GCSE



Questions For Foundation, Higher, and Triple Science (scroll down for questions for higher and triple science only):
(It would still be recommended to answer the foundation tier questions for triple science and higher tier to ensure you have good understanding).

Q1. A student has a cold caused by a virus.

(a) What type of pathogen causes a cold?

_____

(1)

(b) Why are antibiotics not effective against viruses?

_____

_____

(2)

[Total: 3 marks]

Q2. Malaria is spread by mosquitoes.
(a) What type of organism causes malaria?

_____

(1)

(b) How can the spread of malaria be reduced?

_____

_____

(2)

[Total: 3 marks]

Q3. A vaccine is given to a child to protect against measles.
(a) What do vaccines contain?

_____

(1)

(b) Explain how vaccines protect people from disease.

(2)

[Total: 3 marks]

Q4. Bacteria can reproduce quickly in the body.
(a) Name two ways that the body defends itself against pathogens.

(2)

(b) Why is it important to finish a full course of antibiotics?

(2)

[Total: 4 marks]

Q5. Some people do not get vaccinated.
(a) Suggest one reason why someone might choose not to be vaccinated.

(1)

(b) Explain how not being vaccinated could affect other people.

(2)

[Total: 3 marks]

Q6. Scientists test new drugs before they are used.
(a) What is a placebo?

(1)

(b) Why are double-blind trials used in drug testing?

(2)

[Total: 3 marks]

Q7. The body produces antibodies to fight infection.
(a) What type of cell produces antibodies?

(1)

(b) Explain the role of antibodies in fighting infection.

(2)

[Total: 3 marks]

Q8. HIV can lead to AIDS if untreated.
(a) What does HIV do to the immune system?

(1)

(b) How can the spread of HIV be reduced?

(2)

[Total: 3 marks]

Q9. Tobacco mosaic virus affects plants.
(a) State one symptom of tobacco mosaic virus in plants.

(1)

(b) Explain how this disease affects plant growth.

(2)

[Total: 3 marks]

Q10. White blood cells help defend against infection.
(a) Name one way white blood cells destroy pathogens.

(1)

(b) Give another way white blood cells defend the body.

(2)

[Total: 3 marks]

Q11. Some bacteria are resistant to antibiotics.
(a) What does 'antibiotic resistance' mean?

(1)

(b) Why is antibiotic resistance a problem for doctors?

(2)

[Total: 3 marks]

Q12. Gonorrhoea is a sexually transmitted infection (STI).
(a) How can STIs like gonorrhoea be prevented?

(1)

(b) Why is it important to treat gonorrhoea early?

(2)

[Total: 3 marks]

Q13. Pathogens cause communicable diseases.
(a) What is meant by 'communicable'?

(1)

(b) Give two ways pathogens can be spread.

(2)

[Total: 3 marks]

Q14. Painkillers are used when someone has an infection.
(a) What is the purpose of painkillers?

(1)

(b) Do painkillers cure diseases? Explain your answer.

(2)

[Total: 3 marks]

Q15. Plants also defend themselves from infection.
(a) State one physical defence plants have.

(1)

(b) State one chemical defence plants use.

(1)

[Total: 2 marks]

Higher Tier Questions

Q16. Pathogens can cause communicable diseases in plants and animals.
(a) Name one type of pathogen.

(1)
(b) Describe how pathogens can be spread.

(2)
[Total: 3 marks]

Q17. The body defends itself against pathogens.
(a) Describe one chemical defence the human body uses to protect itself.

(2)
(b) Explain how white blood cells help to protect the body.

(3)
[Total: 5 marks]

Q18. Vaccinations help prevent illness.
(a) What is a vaccine?

(1)
(b) Explain how a vaccine protects the body from future infection.

(3)
(c) Suggest one reason why some people choose not to be vaccinated.

(1)
[Total: 5 marks]

Q19. Antibiotics are used to treat bacterial infections.
(a) Why do antibiotics not work on viruses?

(2)
(b) Describe how antibiotic-resistant bacteria develop.

(3)
[Total: 5 marks]

Q20. A new drug is being tested.
(a) What is a double-blind trial?

(2)
(b) Why are double-blind trials used in testing new drugs?

(2)
[Total: 4 marks]

Q21. The skin is a barrier to infection.
(a) Describe how the skin helps to prevent infection.

(2)
(b) State one other physical or chemical barrier to pathogens.

(1)
[Total: 3 marks]

Q22. Malaria is a disease caused by a protist.
(a) Name the organism that spreads malaria.

(1)
(b) Describe one way to reduce the spread of malaria.

(2)
[Total: 3 marks]

Q23. HIV is a viral disease.
(a) How is HIV transmitted?

(1)
(b) What does HIV do to the immune system?

(2)
[Total: 3 marks]

Q24. Measles is a viral disease.
(a) Describe the symptoms of measles.

(2)
(b) Suggest how measles can be controlled in a population.

(1)
[Total: 3 marks]

Q25. Gonorrhoea is a bacterial disease.
(a) How can gonorrhoea be spread?

(1)
(b) How has treatment of gonorrhoea changed in recent years?

(2)
[Total: 3 marks]

Q26. The immune system involves different types of white blood cells.
(a) Name one type of white blood cell.

(1)
(b) Explain how this cell type helps to destroy pathogens.

(3)
[Total: 4 marks]

Q27. A drug is tested in three stages.
(a) Describe what happens in preclinical testing.

(2)
(b) State two things that clinical trials test for.

(2)
[Total: 4 marks]

Q28. Plants can be infected by pathogens.
(a) Name one sign that a plant may be diseased.

(1)
(b) How can the disease be identified?

(2)
[Total: 3 marks]

Q29. Scientists use monoclonal antibodies in research and medicine.
(a) What is a monoclonal antibody?

(2)
(b) State one use of monoclonal antibodies in medicine.

(1)
[Total: 3 marks]

Q30. Some bacteria become resistant to antibiotics.
(a) Describe how the overuse of antibiotics can lead to resistant bacteria.

(3)
(b) Suggest one way to reduce antibiotic resistance.

(1)
[Total: 4 marks]

Triple Science Tier

Q31. Tobacco mosaic virus (TMV) affects many species of plants.
(a) Describe the symptoms of TMV in plants.

(2)
(b) Explain how TMV affects plant growth.

(2)
[Total: 4 marks]

Q32. Scientists have developed genetically modified plants that are resistant to certain diseases.
(a) Suggest one advantage of growing disease-resistant crops.

(1)
(b) State one ethical concern about genetically modified plants.

(1)
[Total: 2 marks]

Q33. A new type of antiviral drug is being tested.
(a) Explain why antiviral drugs are difficult to develop.

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(2)
(b) Suggest why it is important to test new drugs for side effects.

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(2)
[Total: 4 marks]

Q34. A group of students investigate the antibacterial properties of plant extracts.
(a) Describe how they could carry out the investigation.

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(3)
(b) State one variable that should be controlled.

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(1)
[Total: 4 marks]

Q35. A student reads about antitoxins.
(a) What are antitoxins?

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(1)
(b) Which cells produce antitoxins?

(1)

(c) How do antitoxins help defend the body?

(2)

[Total: 4 marks]

Q36. Bacteria reproduce by binary fission.

(a) Describe binary fission.

(2)

(b) A bacterium divides every 30 minutes. Calculate how many bacteria there will be after 3 hours.

(2)

[Total: 4 marks]

Q37. A person becomes infected with a virus.

Explain how the immune system responds to the viral infection.

(6)

[Total: 6 marks]

Q38. Scientists use monoclonal antibodies to deliver drugs to specific cells.

(a) Explain why monoclonal antibodies are useful for treating cancer.

(3)
(b) State one risk of using monoclonal antibodies.

(1)
[Total: 4 marks]

Q39. A student investigates the spread of plant diseases.
(a) Suggest one method to detect disease in a plant early.

(1)
(b) Describe how plant diseases can be controlled in agriculture.

(2)
[Total: 3 marks]

Q40. Rose black spot is a fungal disease.
(a) How does rose black spot affect plants?

(2)
(b) Suggest one method of controlling the spread of rose black spot.

(1)
[Total: 3 marks]

Q41. Describe how the structure of a virus differs from that of a bacterial cell.

(3)
[Total: 3 marks]

Q42. A school reports a sudden increase in flu cases.
(a) Suggest two ways to reduce the spread of the flu virus in the school.

(2)
(b) Explain how herd immunity works.

(2)
[Total: 4 marks]

Q43. Scientists are developing a vaccine for a new virus.
Describe the stages involved in developing and testing a new vaccine.

(5)
[Total: 5 marks]

Q44. Explain why antibiotics cannot be used to treat diseases caused by viruses.

(2)
[Total: 2 marks]

Q45. Give one example of a non-specific defence system and explain how it protects the body.

(2)
[Total: 2 marks]