



Biology Leaving Certificate Higher Level

Past Exam Questions on:

Monera / Bacteria / Antibiotics

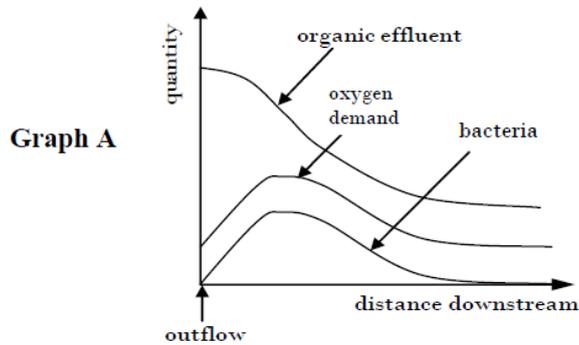
**Q12 2013**

- (b) (i) Name the kingdom to which bacteria belong.
- (ii) Draw a large diagram of a bacterial cell to show:
1. The relative positions of the cell wall, cell membrane and capsule.
  2. A plasmid.
- Label **each** of the above structures.
- (iii) 1. Under what circumstances does a bacterial cell form an endospore?  
2. Describe briefly how an endospore forms.
- (iv) Name **two** types of heterotrophic nutrition used by bacteria.
- (c) (i) Distinguish clearly between *antibodies* and *antibiotics* by writing a note about each.
- (ii) In relation to antibodies, distinguish between active and passive immunity.
- (iii) Using your knowledge of antibiotics and bacteria, suggest why a person is more likely to pick up an infection in hospital than at home.

**Q12 (b) 2010**

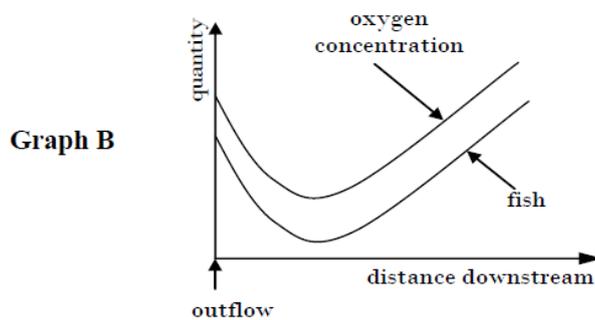
- (b) A paper factory pumps liquid effluent into a river. The effluent contains sugar.  
Oxygen demand is the amount of oxygen needed by organisms living in a river.  
Oxygen concentration is the amount of oxygen dissolved in the river water.

**Graph A** shows changes in water conditions for several kilometres downstream from the factory outflow.



- (i) To which kingdom do bacteria belong?
- (ii) Give **one** reason why the number of bacteria increases immediately downstream from the outflow.
- (iii) Give **one** reason why the number of bacteria then decreases further downstream from the outflow.
- (iv) Describe how the oxygen demand changes as the number of bacteria in the water changes.
- (v) Give a reason for your answer to part (iv).

**Graph B** shows the changes in oxygen concentration and the number of fish in the same river.

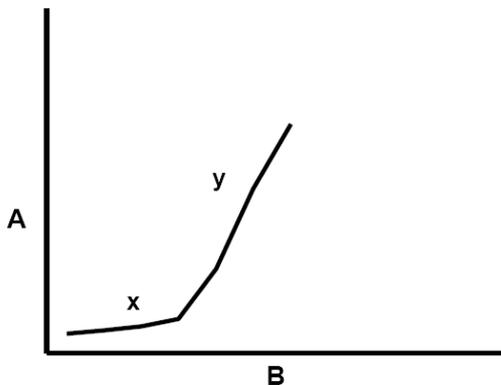


- (vi) Explain why the curve for fish numbers is the same shape as that for oxygen concentration.
- (vii) The oxygen concentration in the river water eventually increases with distance from the outflow. Suggest **two** ways by which this oxygen may enter the water.

**Q15(c) - 2008**

c) The diagram shows a bacterial growth curve.

- (i) **A** and **B** represent the labels on the axes. What does each of them stand for?
- (ii) What term is applied to the part of the curve labelled **x**? What is happening during **x**?
- (iii) What term is applied to the part of the curve labelled **y**? What is happening during **y**?
- (iv) Copy the diagram into your answer book and continue the curve to show the next phase. Explain why you have continued the curve in this way.
- (v) Distinguish between batch and continuous flow food processing using micro-organisms in the food industry.



**Q14(b) – 2007 (Antibiotics)**

- b)
  - (i) Comment on the difficulty of defining viruses as living organisms.
  - (ii) What are the two main biochemical components of a virus particle?
  - (iii) Name **two** diseases caused by viruses.
  - (iv) Give an example of a beneficial application of a virus.
  - (v) What is an antibiotic?
  - (vi) Antibiotics should not be prescribed for a person suffering from a viral infection. Suggest a reason for this.

**Q15(b) - 2006**

Answer the following in relation to bacteria.

- (i) Distinguish between photosynthetic and chemosynthetic bacteria. Give an example of each type.
- (ii) Name **two** forms of heterotrophic nutrition found in bacteria.
- (iii) What are antibiotics? For what purpose are they used?
- (iv) Explain what is meant by antibiotic resistance and suggest how it may develop.

**Q15(b) - 2005**

- (b) (i) Draw and label a diagram to show the basic structure of a typical bacterial cell.
- (ii) Other than being prokaryotic, state **two** ways in which a typical bacterial cell differs from a typical human cell (e.g. cell from cheek lining).
- (iii) Describe how some bacteria respond in order to survive when environmental conditions become unfavourable.
- (iv) What is meant when a bacterium is described as being pathogenic?
- (v) What are antibiotics? Use your knowledge of the Theory of Natural Selection to explain the possible danger involved in the misuse of antibiotics.