

AQA, OCR, Edexcel

GCSE Science

GCSE Biology

Microorganism Questions

Name:

M M E

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Total Marks: /16

Q1: List 2 ways the human body can prevent bacteria entering the body to cause infection.

1. _____
2. _____

(2 marks)

Q2: In order to replicate, bacteria use what method of cell division?

(1 mark)

Q3: *Staphylococcus aureus* reproduces every 20 minutes. If there were 300 bacterial cells replicating in nutrient broth, how many cells would there be in the broth after 24 hours? Show your working.

Number of bacterial cells after 24 hours _____ (2 marks)

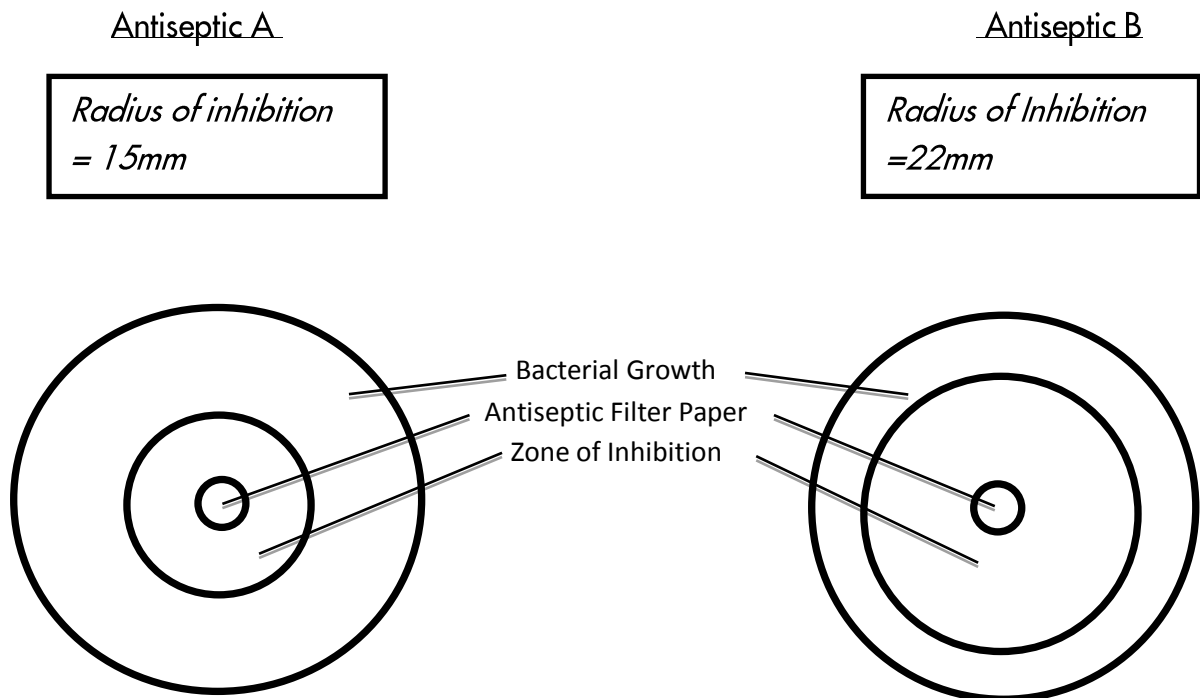
Q4: Describe how a laboratory technician would use aseptic techniques to prepare a bacterial culture.

(4 marks)

Q5: *Streptococcus pneumoniae* is a common cause of pneumonia, an infection that affects the lungs. Scientists have developed two antiseptics to help stop the spread of the disease.

By using agar plates and small filter papers containing the antiseptics, the *Streptococcus pneumoniae* is spread across the agar plates to grow. After 48 hours incubation the scientists need to gather the results, to determine which antiseptic is most suitable.

Figure 1:



Zone of inhibition for Antiseptic A = 706mm

- i) Using the information above calculate the zone of inhibition for antiseptic B.

($\pi = 3.14$)

Zone of inhibition of antiseptic B _____mm²

(3 marks)

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- ii) Using your results from figure 1, which antiseptic should the scientists use to help stop the spread of *Streptococcus pneumoniae*?

(1 mark)

Q6: For future experiments the scientists want to improve the validity of their results. List 3 Variables the scientists can control.

1. _____
2. _____
3. _____

(3 Marks)