

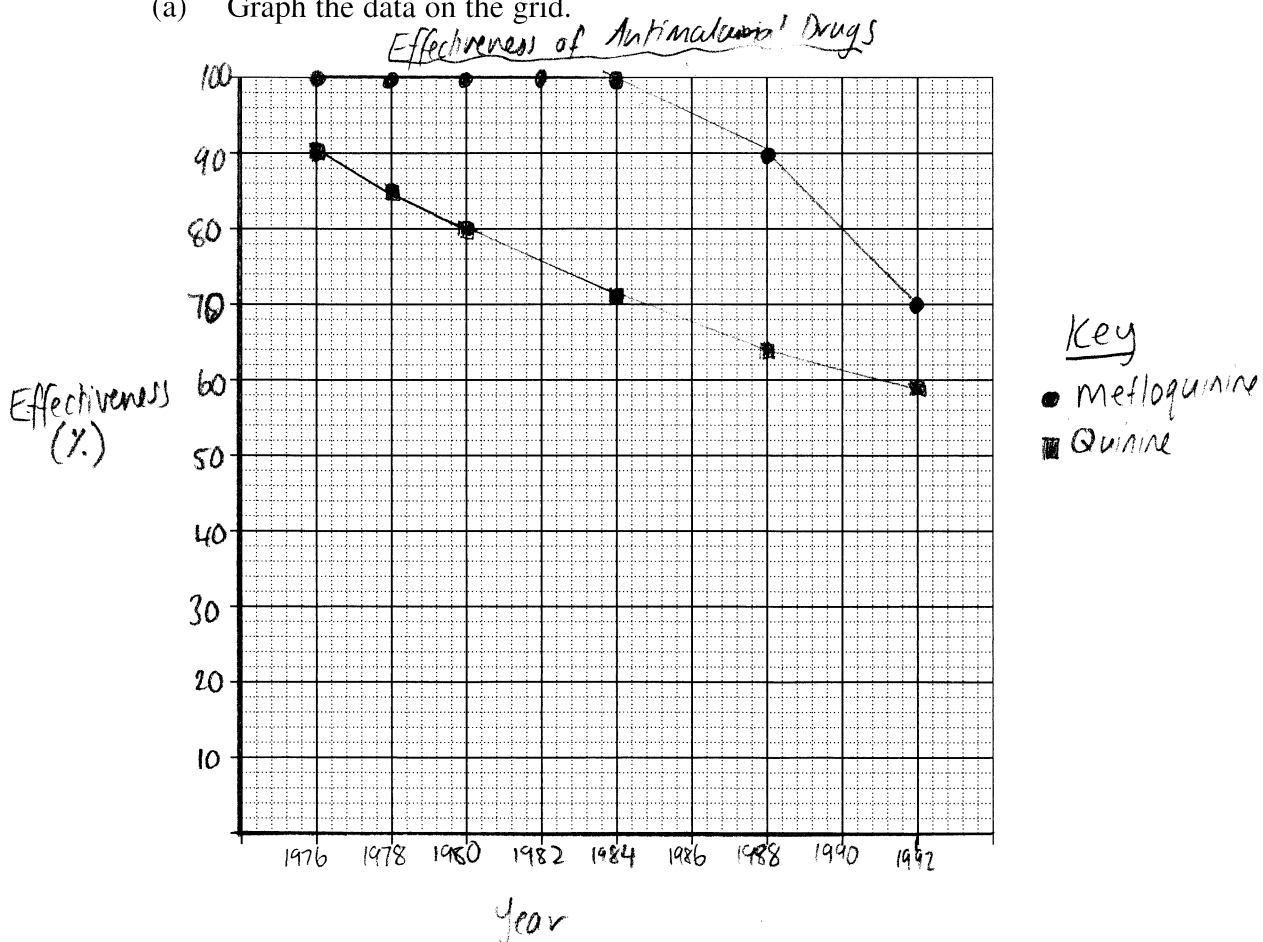
Question 22 (6 marks)

The following data were recorded about the effectiveness of antimalarial drugs for treating malaria.

Year	Effectiveness of drug (%)	
	Mefloquinine	Quinine
1976	100	90
1978	100	85
1980	100	80
1984	100	72
1988	90	64
1992	70	58

(a) Graph the data on the grid.

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Question 22 continues on page 11

Question 22 (continued)

- (b) Use these data to explain the impact of human processes on biodiversity.

3

The data provides evidence for the arise of resistance in the bacteria causing malaria, as the effectiveness of mefloquine was stable at 100% for 8 years then declined rapidly and the effectiveness of quinine decreased steadily over the 17 year period. The decrease in effectiveness is due to resistance in the bacteria's population, which has a change that has been brought about by the human's development of the antimalarials, as they have allowed for only those with natural genetic resistance to survive and reproduce. Thus the human process of developing and using antimalarials has changed the biodiversity of the bacterial population so that it is now increasingly resistant to the drug.

End of Question 22