

Principles of organisation (cells → tissues → organs → systems)

Q1. (2019)

04.6		a ratio of 30 000:1 for X and 0.55:1 for Y scores 3 marks		4.1.3.1
	(SA: vol ratio of X =) $2.4 \times 10^{-7} : 8 \times 10^{-12}$ or 0.000 000 24 : 0.000 000 000 008		1	AO2
	(SA: vol ratio of Y =) 726:1331	if no other calculation marks awarded allow 1 mark for calculation of SA for X and Y or calculation of volume for X and Y or calculation of SA and volume for one or both cubes if not given as a ratio	1	AO2
	conversion to same scale: 30 000:1 and 0.55:1		1	AO2
	(so) diffusion distance is longer in multicellular organism or (so) volume supplied by each unit of surface area is greater in multicellular organism	allow converse allow converse allow idea that some cells will have no surfaces exposed to outside in multicellular organism	1	AO1
	(so) diffusion rate per unit volume is slower in a multicellular organism	allow converse	1	AO2