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Level: HL IB in Biology

Subject: Biology

Topic: IB HL Biology Type: Mark Scheme



All International Baccalaureate IB Topic Questions HL Biology

BIOLOGY

HL - IB

Key skills



Answer 1

The correct answer is A because this property means that stem cells could be used, for example, to produce regenerated tissue or to help with diseases in which a particular cell type is absent or malfunctioning. These types of uses are known as therapeutic uses, because they provide therapies for diseases, injuries and other health problems.

B is incorrect as this description can only really be applied to plasma cells, which secrete antibodies that can work towards the destruction of virus particles; plasma cells are fully differentiated, and are not stem cells.

C is incorrect because while stem cells can divide by mitosis, mitotic division cannot produce gametes, which are produced during meiosis.

D is incorrect because, while any chromosomes may be suitable for gene transfer, this characteristic does not make stem cells any more useful in medicine than any other cell type.





Answer 2

The correct answer is C 3:1

Surface area:

- A cube has 6 faces
- Area of one face = 2 x 2 = 4
- Surface area of whole cube = 6 x 4 = 24

Volume:

- Volume = length x breadth x height
- $2 \times 2 \times 2 = 8$

Surface area: volume ratio:

- 24:8
- Divide both sides by 8
- 3:1



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