OBHS Core Questions:

Subject: Science

Year and Term: Year 10 Autumn Term

Topic: B1 Cell Biology including Stem cells and the Cell cycle

Learn these questions to build a strong foundation of knowledge for this half-term. Ask family or friends to test you regularly, or practise on your own using the 'Look, Say, Cover, Write' method.

Question	Answer
1. What is a stem cell?	A cell that can divide to produce many types of specialised cells.
2. Where can stem cells be found in the human body?	In embryos and in some adult tissues like bone marrow.
3. What is the difference between adult stem cells and embryonic stem cells?	Embryonic stem cells can become any type of cell; adult stem cells are more limited to mainly blood cells.
4. What is one use of stem cells in medicine?	To treat diseases such as diabetes or to repair damaged tissues.
5. What is the ethical issue some people have with embryonic stem cells?	Using them involves destroying embryos, which some people believe is wrong.
6. What is the cell cycle?	The series of stages a cell goes through as it grows and divides.
7. What happens during the growth phase of the cell cycle?	The cell grows and replicates its DNA and organelles.
8. What is DNA replication and when does it happen in the cell cycle?	The process where DNA is copied; it happens before mitosis.
9. What is mitosis?	A type of cell division that produces two identical daughter cells.
10. Why is mitosis important?	It allows for growth, repair, and asexual reproduction.
11. How many cells are produced at the end of mitosis?	Two.
12. Are the daughter cells genetically identical or different after mitosis?	They are genetically identical.
13. In which type of cells does mitosis take place?	Body cells.
14. What is the total number of chromosomes in a human body cell?	46.
15. How many chromosomes are in the daughter cells after mitosis?	46.
16. What is differentiation?	The process where a stem cell becomes a specialised cell.
17. Can stem cells become any type of cell?	Embryonic stem cells can; adult stem cells have limited types.

18. What is therapeutic cloning?	Producing an embryo with the same DNA as the patient to create matching cells.
19. Why are stem cells used in research?	To understand diseases and develop new treatments.
20. What is therapeutic cloning?	A technique where an embryo is produced with the same genes as the patient.
21. How can therapeutic cloning be useful in medicine?	It could produce stem cells that are not rejected by the patient's body.
22. Why might some people be against therapeutic cloning?	It involves the use and destruction of human embryos, which raises ethical concerns.
23. What are meristems in plants?	Regions in plants where unspecialised cells (stem cells) divide to produce new cells.
24. Where are meristem cells found in a plant?	In the tips of roots and shoots.
25. Which type of stem cell has the most ethical issues?	Embryonic stem cells