

Unit 5: Genetics
Bio-Technology PowerPoint Questions

DNA Extraction

1. When cells are treated with certain chemicals, it causes the plasma membrane to _____ or lyse.
2. DNA can be pulled out of cells because it is _____ and can be _____.
3. Describe the appearance of DNA spooled from cells.

4. What may be used to cut DNA into smaller pieces?
5. Do all restriction enzymes cut DNA at the same place?
6. What 2 properties can be used to separate DNA fragments?
7. Why does DNA have a negative charge?

8. To separate DNA fragments, it is placed in a _____ with a current of _____ running through it.
9. This process is called _____.
10. What determines the direction DNA will move in a gel?

11. Which fragments move further and faster?
12. DNA fragments are loaded into depression on the gel called _____.
13. The DNA gel floats in a chamber covered with a _____ solution.
14. DNA fragments closest to the wells are _____ in size, while the _____ DNA fragments are further from the wells.

Steps in DNA Sequencing

15. Many copies of a _____ of DNA are placed in a test tube and _____ is added to begin the process.
16. What else must be added?

17. How are the different nucleotide bases marked or tagged?

18. Dyed and _____ nucleotides are added, but the large _____ molecules stop the chain from growing producing DNA fragments of _____ sizes.

19. The fragments make banding patterns on an electrophoresis gel of different _____ that can be identified.

20. The separated fragments are then read by _____ from the _____ of the gel to the top.

Copying DNA

21. Define PCR and tell what it stands for.

22. To make many copies of DNA, DNA polymerase is added that can work at very high _____.

23. DNA is _____ to separate the two strands.

24. What is added next to the test tube of DNA and DNA polymerase?

25. What are primers?

26. When the tube is cooled, DNA polymerase adds new _____ to the separated DNA strands.

27. Even though a small amount of DNA is used to start PCR, _____ amounts of DNA can be copied.

Cloning

28. What is a clone?

29. Clones may be produced by _____ reproduction.

30. What two types of cells are combined in order to clone an organism?

31. Once a body cell fuses to an egg cell, the cell divides like a normal _____.

32. What was the first successfully cloned organism?