

Science 9  
Reproduction Unit Review Answers

**Part B: Fill in the blanks for each of the questions that follow:**

- |                              |                          |                             |
|------------------------------|--------------------------|-----------------------------|
| 1. Robert Hooke              | 20. cell wall            | 39. spore formation         |
| 2. Leeuwenhoek               | 21. vacuole              | 40. Vegetative reproduction |
| 3. Robert Brown              | 22. chloroplast          | 41. 46                      |
| 4. Compound Light Microscope | 23. flagellum            | 42. Deoxyribonucleic acid   |
| 5. transmission              | 24. cilia                | 43. ATGC                    |
| 6. scanning                  | 25. cell cycle           | 44. replication             |
| 7. cell membrane             | 26. mitosis              | 45. DNA fingerprints        |
| 8. nucleus                   | 27. cytokinesis          | 46. mutations               |
| 9. chromosomes               | 28. interphase           | 47. cancer                  |
| 10. genes                    | 29. prophase             | 48. carcinogen              |
| 11. cytoplasm                | 30. metaphase            | 49. regeneration            |
| 12. organelle                | 31. anaphase             | 50. specialized cells       |
| 13. nucleolus                | 32. telophase            | 51. stem cells              |
| 14. ribosomes                | 33. asexual reproduction | 52. transplants             |
| 15. mitochondrion            | 34. sexual reproduction  | 53. cloning                 |
| 16. endoplasmic reticulum    | 35. zygote               | 54. Dolly                   |
| 17. Golgi apparatus          | 36. binary fission       | 55. enucleated              |
| 18. lysosomes                | 37. budding              |                             |
| 19. centriole                | 38. fragmentation        |                             |

**Part C: Short Answer Questions**

1. Prophase - chromosomes shorten and thicken, nuclear membrane dissolves

Metaphase- chromosomes line up in the middle of the cell

Anaphase- Chromosomes split apart and move to the poles, daughter cells have complete set of genetic information.

Telophase- chromosomes reach opposite poles, nuclear membrane reforms, cytokinesis begins, cytoplasm/organelles split into equal parts.

2. Cell division is important for the repair of cells and the renewal of worn out cells.

3. DNA replication. The DNA unzips (splits into two strands) and each of these strands makes a copy of itself. You end up with two new strands of DNA, which are identical to the original.

DNA replication is important for cells division. The genetic material, regulating cell activity, must be found in each new cell. If the DNA did not replicate there would not be enough genetic material for the cell to continue to divide.

4. a) Asexual and Sexual Reproduction- asexual reproduction involves one cell splitting into two identical cells and there is no fertilization required. Sexual reproduction involves two cells fusing that have different genetic information and there must be a fertilization.

b) Zygote and Daughter Cell – the zygote has different genetic information than the parent the daughter cell is identical to the parent.

c) Regeneration and fragmentation - regeneration occurs when a limb or other body part can re-grow if removed. Fragmentation involves the broken body part developing into a new organism.

d) Budding and fragmentation- fragmentation occurs when a piece breaks off and then forms into a new organism. Budding occurs when an outgrowth from the parent breaks off and becomes a new organism once it has fallen off.

5. The cells of a lizard are not as specialized. Human cells are too specialized and therefore we cannot regenerate limbs. The only cells which we can regenerate are skin cells, bones and some tissue cells

**Part D: Labeling Diagrams**

**Plant cell**

1. cytoplasm
2. cell membrane
3. endoplasmic reticulum
4. nucleolus
5. vacuole
6. chloroplast

7. mitochondria

8. cell wall

**Microscope**

1. body tube
2. revolving nose piece
3. objective lens
4. clips
5. diaphragm

6. light source

7. ocular lens

8. arm

9. stage

10. coarse adjustment knob

11. fine adjustment knob

12. base