Science 9
Reproduction Unit Review Answers

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

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

Part C: Short Answer Questions

1. Prophase - chromosomes shorten and thicken, nuclear membrane dissolves
Metaphase- chromosomes line up in the <u>middle</u> of the cell
Anaphase- Chromosomes split <u>apart</u> and move to the poles, daughter cells have complete set of genetic information.
Telophase- chromosomes reach opposite poles, nuclear membrane reforms, <u>cytokinesis</u> 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

<u>Plant cell</u>
1. cytoplasm
2. cell membrane
3. endoplasmic reticulum
4. nucleolus
5. vacuole
6. chloroplast
7. mitochondria
8. cell wall

<u>Microscope</u>
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. course adjustment knob
11. fine adjustment knob
12. base