

FINAL EXAM Review Package - BIOLOGY
Answer Section

COMPLETION

1. growth, repair
2. mitosis
binary fission
3. chromosomes
4. 46, 46
forty-six, forty-six
5. ribosomes, nucleolus
6. nitrogenous bases
7. thymine
8. protein
9. your mother
my mother
10. interphase
11. plant
12. carcinogens
13. regeneration, fragmentation
14. spores
15. binary fission, identical
binary fission, the same
16. gametes
17. zygote, fertilization
18. scrotum
19. urethra
20. seminiferous tubules
21. flagellum
22. vas deferens
23. Testosterone
24. fallopian tubes
25. estrogen, progesterone

MATCHING

26. B
27. E
28. F
29. A
30. C
31. D

- 32. C
- 33. B
- 34. E
- 35. D
- 36. A
- 37. F

ESSAY

- 38. The size of a cell is not determined by the size of the organism; it depends on the volume to surface ratio. If a cell is too large, it cannot exchange materials fast enough to keep up with the internal demands of the cell. Therefore, an elephant's cells are likely the same size as a human's.
- 39. The gene is used to make another strand called RNA. This RNA leaves the nucleus and is transported to a ribosome. The ribosome follows the instructions in the RNA and uses this recipe to make a protein.
- 40. Animal cells have centrioles that form the spindle; plant cells form spindle fibres without centrioles. During cytokinesis, animal daughter cells are formed when the cell membrane pinches in, dividing the cytoplasm between the two new nuclei. Plant cells have a cell wall; during cytokinesis, a cell plate forms between the two nuclei, connecting to form a complete cell wall that separates the cells.
- 41. Radiation can cause mutations in the genes that control cell division; this can result in cancer. For example, UV radiation can cause skin cancer. Radiation can be used to kill cancer cells by disrupting cell division in rapidly dividing cells.
- 42. Ferns are not like many other plants; they do not produce seeds. Instead, they reproduce by means of spores. The spots on the underside of the fronds are where the spores are formed; the spots are not a disease or infection. If these spores fall to the ground, they may grow into a fern plant identical to the one the customer bought.
- 43. **pro**
- Diversity allows for more varied response to environmental changes, such as disease.
- con**
- need mate
- slower than asexual
- 44. Mutations in skin or liver cells are localized to the individual. They cannot be passed on to the next generation. Mutations in sex organs, such as testes and ovaries, may be passed on to the next generation. If the offspring survive with this mutation, then the mutation will enter the gene pool of the population and, together with other such mutations, may eventually lead to a new species.
- 45. Mutations are changes in the DNA sequence brought about by exposure to certain types of chemicals, viruses, and radiation. They are important because they alter the DNA code, which, in turn, alters the products that the affected stretch of DNA codes for. If the affected product is crucial to survival, the mutation may result in the death of the organism. If the mutation changes the characteristics of the protein without altering its functionality, the mutation may result in the introduction of a new characteristic into the gene pool.