Science 9
Reproduction Exam Review

Pages 140-141, 142-143,150-153, 159-161, 176-177

Part A: You are responsible to know the following definitions/terms that were covered in these sections:

mutation
ocular lens
body tube
revolving nose piece
course adjustment knob
fine adjustment knob
arm
objective lens
stage
clips
diaphragm
enucleated cell
DNA
genetic engineering
DNA replication
transgenics
DNA fingerprints
genes
Cell Membrane
Cell Wall
Mitochondria
regeneration
stem cell
tumour
Endoplamic Reticulum (ER)
Vacuole
Chloroplast
Lysosome
cloning
fragmentation
malignant
Golgi Apparatus
Cytoplasm
cancer
carcinogen
Ribosome
Nucleus
Nucleolus
Centrioles
benign
chromosome

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

1. _____ first described cells in 1665.
2. _____ observed blood cells, bacteria and other organisms.
3. _____ was the first to describe the nucleus in a plant cell.
4. A microscope that uses light to see a specimen is called the _____.
5. A _____ electron microscope uses electron beams to view a specimen.
6. A _____ electron microscope produces a 3-D image of a specimen.
7. The entire cell is covered in a _____.
8. The _____ of the cell acts as the control centre.
9. Genetic information is organized into threadlike structures called _____.
10. _____ are units of genetic information.
11. The _____ is the area of the cell where the work is done.
12. An _____ is a specialized structure inside a cell.
13. The _____ is a spherical structure within the nucleus that makes proteins.
14. An organelle that builds protein is called the _____.
15. The _____ is a tiny oval shaped organelle that provides energy.
16. The _____ is a series of “canals” that carry materials throughout the cell.
17. The structure that stores proteins until needed for use is called the _____.
18. A _____ is a sac-like structure that breaks down molecules and cell parts.
19. A small protein structure critical to cell division is called the _____.
20. The cell membrane in the plant cell is covered with a _____.
21. The _____ is a fluid filled space containing water, sugar, minerals and protein.
22. The organelle containing chlorophyll, which is used in photosynthesis, is the _____.
23. The _____ is a whiplike tail that helps the cell move.
24. Some cells have tiny hairs called _____.
25. The sequence of events from one division to another is called the _____.
26. The process of dividing nuclear material is called _____.
27. _____ is the process of separating the cytoplasm and cell contents into equal parts.
28. Cells grow and prepare for cell division in this stage: _____.
29. Chromosomes shorten and thicken and the nuclear membrane fades during this phase: _____.
30. In _____, the chromosomes line up in the middle.
31. In _____, the chromosomes split apart.
32. In _____, the chromosomes reach the opposite poles, the nuclear membrane reforms and cytokinesis takes place.
33. When a single organism gives rise to offspring with identical genetic information it is called _____.
34. In _____ , genetic information from two cells is combined to produce a new organism.
35. A _____ is a fertilized egg.
36. _____ is when an organism reproduces by dividing in two. (ex bacteria)
37. _____ is when an offspring begins from a small outgrowth from the parent. (ex hydra)
38. _____ is when a new organism is formed from a part that breaks off from the parent. (ex starfish)
39. _____ is when an organism forms spores to reproduce. (ex dandelions)
40. _____ is when a plant forms runners which develop into another plant. (ex strawberries)
41. Humans have _____ chromosomes.

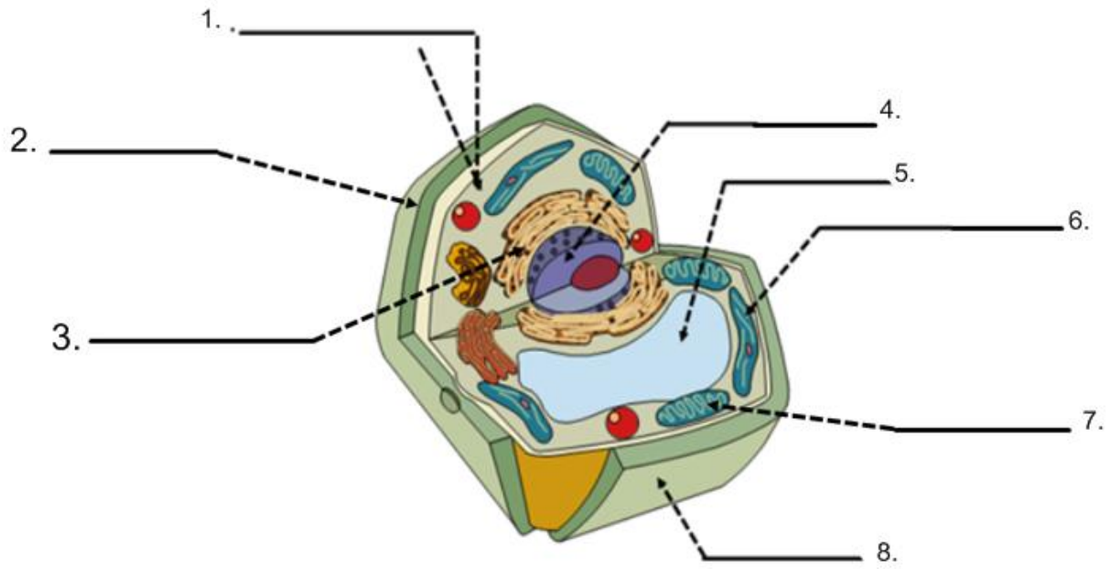
42. _____ or DNA for short.
43. The four codes of DNA are: _____
44. When DNA makes a perfect copy of itself it is called _____.
45. Your _____ are unique to you.
46. _____ are changes in the genetic code.
47. When cell division goes out of control it is called _____.
48. A _____ is a substance or energy that causes a mutation.
49. _____ is the ability to regrow tissue or an organ.
50. _____ are cells that use only small amounts of their genes.
51. _____ are cells that have all of their genetic information turned on.
52. _____ replace organs that is not functioning well.
53. _____ is the natural process, repeated daily in nature.
54. _____ was a cloned mammal
55. _____ is a cell without a nucleus.

Part C: Short Answer Questions

1. Describe the process of cell division. Be sure to include the names of the steps and the correct order.
2. Example why cell division is so important to humans?
3. Explain briefly how DNA replication occurs and why it is important.
4. Compare each of the following terms:
    a. Asexual and Sexual Reproduction
    b. Zygote and Daughter Cell
    c. Regeneration and fragmentation
    d. Budding and fragmentation
5. Explain briefly why the limbs of an animal like a lizard can regenerate, but not human limbs.

Part D: Labeling Diagrams

a) Label each of the following parts of the Plant cell shown.
b) For each part of the cell that was labeled give the organelles function.



Label each part of the microscope: