

AP Biology Summer Work
(Due First Class Period of School)

Name _____

Answer the following questions. These are things that were probably covered in Biology 1, but you will need to look up some items. It will be checked for accuracy, so be sure to use a good source to find the answers.

1. Name the cellular organelles that perform the following functions:

Production of proteins by translation of mRNA _____

Production of ATP by cellular respiration _____

Storage of food and water _____

Production of carbohydrates by photosynthesis _____

Packaging of materials for secretion through the membrane _____

Storage of enzymes that digest foreign materials _____

Part of the cell that contains chromosomes _____

2. Cysteine, arginine, and phenylalanine are all types of _____.

3. Guanine, cytosine, and adenine are types of _____.

4. Proteins that act as catalysts in living things are known as _____.

5. Sugars and starches are collectively types of _____.

6. Fats, oils, and waxes are collectively known as _____.

7. Compounds with the same chemical formulas, but different structures are known as _____.

8. Draw the following chemical groups that are important in biological compounds:

Alcohol

Amine

Ketone

Aldehyde

Carboxylic Acid

Phosphate

9. The formation of a chemical bond with the removal of a water molecule is known as _____.

10. The polysaccharide that stores energy in the liver and muscle cells of animals is _____.

11. The tough polysaccharide making up the cell walls of plants is _____.

12. What is the difference between a saturated fat and an unsaturated fat?

13. What pH is neutral? _____ What pH range is acidic? _____ What pH range is basic? _____

14. What amino acids can bond together to create disulfide bridges in proteins? _____

15. What are the two main differences between prokaryotes and eukaryotes?

16. The tiny channels through cell walls that connect plant cells are known as _____.
17. Proteins that have carbohydrates bonded to them are known as _____.
18. What is the purpose of a contractile vacuole? In what type of an environment would an organism need this structure?
19. The movement of a substance from high concentration to low concentration is known as _____.
20. The specific movement of water across a membrane due to the concentration gradient is called _____.
21. The pressure inside of a plant cell that results from water flowing into the cell is known as _____.
22. What is the term used to describe a reaction that releases free energy? _____.
23. The material that is acted on by an enzyme in a biological reaction is called the _____.
24. The breaking down of a glucose into to pyruvic acid molecules is known as _____.
25. Organisms that are able to make their own food, such as most plants, are described as _____.
26. Openings in a leaf to take in carbon dioxide are called _____.
27. How many chromosomes are in a normal human somatic cell? _____.
28. The division of a cellular nucleus to produce identical nuclei is known as _____.
29. In _____ of cell division, chromosomes line up in the middle of the nucleus.
30. In which major phase of the cell cycle does DNA synthesis and replication of chromosomes take place? _____.
31. In humans, what is the difference in chromosomes between males and females?
32. When an egg cell is fertilized, the resulting diploid cell is known as the _____.
33. The type of cell division that results in four distinct haploid cells is known as _____.
34. In genetics, the outward appearance of a trait in an organism is known as its _____ and the underlying genetic makeup that results in this appearance is called the _____.
35. In a molecule of DNA, guanine is complementary to _____ and adenine binds to _____.
36. In RNA, adenine is complementary to _____.
37. A _____ is a set of three nitrogen bases on a molecule of mRNA that determines the identity of one amino acid.
38. _____ RNA is used to carry amino acids to the ribosome where they are connected to the polypeptide chain.
39. The noncoding segments of a nucleic acid strand are known as _____ and the strands that are expressed during translation are called _____.
40. _____ genes are carried on the X-chromosome and are usually only expressed in males.

41. Body parts such as the forearms of different mammals that are similar in underlying structure, but are different in function are known as _____ structures.
42. Body parts that no longer function but are the remnant of functional structures are _____ structures.
43. The scientific name of an organism is composed of the _____ and _____ written together.
44. What are currently considered the six kingdoms of living things?
45. What is the major difference between bryophyte plants and tracheophyte plants?
46. Into what phyla of animals are each of the following classified?
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|---------------------------------|-----------------------------------|
| Shrimp and lobsters _____ | Hookworms and Ascaris worms _____ |
| Starfish and sand dollars _____ | Sponges _____ |
| Jellyfish and coral _____ | Vertebrates _____ |
| Insects and spiders _____ | Earthworms and leeches _____ |
| Tapeworms and flukes _____ | Clams, oysters, and snails _____ |
47. What is the term for the extremely resistant cells formed by bacterial in poor living conditions? _____
48. Bacteria known as *halophiles* can live in what type of extreme environment? _____
49. A type of symbiosis in which both organisms benefit is known as _____.
50. A type of symbiosis in which one organism benefits and the other is unaffected is called _____.
51. The waxy covering on the leaves of some plants that helps to prevent water loss is called the _____.
52. _____ tissue carries water and minerals in plants. _____ tissue carries food.
53. Plants, such as pines, that do not have flowers or fruits are called _____.
54. Plants that produce fruits and flowers, the dominant plants on earth, are known as _____.
55. A _____ is a type of symbiosis between an algae and a fungus. They often grow on rocks and trees.
56. The _____-_____ fishes are an ancient group thought to have given rise to amphibians.
57. What was the advantage of the development of the amniotic egg in vertebrates?
58. What is the difference between vertebrates that are ectothermic and those that are endothermic?
59. What is unique about the *endosperm* of a flowering plant?
60. What is the term for the space between the axon of one neuron and the dendrite of the next? _____