Marine Biology Chapter 4 Study Guide

“Fundamentals of Biology”

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*Answer the following for preparation of the “Fundamentals of Biology” exam.*

1. What are the four organic molecules that make up living things?
2. Of what are proteins composed?
3. What is meant by “lipids are mainly hydrophobic”?
4. What are two types of nucleic acids?
5. Of what are nucleic acids made ?
6. Define autotrophs.
7. Define heterotrophs.
8. Define primary production.
9. What are the two basic groups that all organisms can be divided into?
10. What is the function of each of the following organelles?
    1. Mitochondrion
    2. Golgi apparatus
    3. Rough endoplasmic reticulum
    4. Vesicles
    5. Vacuoles
    6. Ribosomes
    7. Chloroplasts
    8. Centrioles
11. List the levels of organization from smallest to largest.
12. How do osmoconformers maintain a solute/water balance?
13. How do osmoregulators maintain a solute/water balance?
14. Define asexual reproduction.
15. **List** and **define** three examples of asexual reproduction.
16. Define broadcast spawning.
17. Define internal fertilization.
18. How is internal fertilization more beneficial than broadcast spawning?
19. Define evolution according to notes taken from your textbook.
20. Define natural selection.
21. What is phylogenetics?
22. What are three functions of carbohydrates?
23. What is the carbon to hydrogen to oxygen ratio of carbohydrates?
24. What are enzymes?
25. List three functions of lipids.
26. Compare and contrast photosynthesis and celular respiration.
27. Name three types of molecules that are converted into from some carbohydrates made by photosynthetic organisms.
28. Define primary producers.
29. From where is the major source of worldwide primary production?
30. List four characteristics of prokaryotes.
31. List three characteristics of eukaryotes.
32. Define the following terms:
    1. Population
    2. Community
    3. Ecosystem
33. Define diffusion.
34. Define solute.
35. Define osmosis.
36. What makes diffusion and osmosis problematic for marine organisms?
37. Define and give one example of the following:
    1. Ectotherm
    2. Poikilotherm
    3. Endotherm
    4. Homeotherm
38. Define sexual reproduction.
39. Define hermaphrodite.
40. How are protandry and protogyny similar? How are they different?
41. What is taxonomy?
42. List the levels of classification from **smallest** to **largest**.
43. What defines a species?
44. What are three things a plant cell has that an animal cell doesn’t?
45. What is one thing an animal cell has that a plant cell doesn’t?
46. Define molecule.
47. How are the offspring similar to the parent in asexual reproduction?
48. What organs produce eggs in sexual reproduction?
49. What organs produce sperm in sexual reproduction?
50. How do broadcast spawning species time the release of their eggs?