

Name: ANSWERS

1. Carbon cannot be found in our environment in:

- a) **Animal tissues**
- b) Mineral salt crystals
- c) Fossil fuels
- d) Shells

2. Which of the following processes does not cycle carbon dioxide (CO₂) back into the atmosphere?

- a) **Photosynthesis**
- b) Decomposition of waste
- c) Forest fires
- d) Volcanic eruptions

3. Which of the following sources of energy is derived from the lithosphere?

- a) Moving water
- b) Wind
- c) Sun
- d) **Molten rock**

4. Chose the statement which is false. Areas of permafrost can be challenging to live in because:

- a) agriculture is not possible.
- b) buildings can collapse.
- c) **sunshine is lacking.**
- d) the ground is usually frozen.

5. Which of the following is not a possible consequence of melting permafrost?

- a) **Decreased primary productivity**
- b) Increased erosion
- c) Increased Global Warming
- d) Increased decomposition of soil

6. Which of the following is not a characteristic of both glaciers and pack ice?

- a) Made up of ice
- b) Affected by global warming
- c) Moves
- d) **Formed on water**

7. From the statements below, chose two which will cause a decrease in the salinity of ocean water.

- 1. More salt is dissolved in it
- 2. Less salt is dissolved in it
- 3. Ice floes and glaciers melt
- 4. Water evaporates at the equator

- a) 1 and 3
- b) 1 and 4
- c) 2 and 3
- d) **2 and 4**

8. Which of the following is a renewable energy source derived from the hydrosphere?

- a) Solar panels
- b) Wind turbines
- c) **Wave energy**
- d) Geothermic

9. Which greenhouse gas is released by the thawing permafrost?

- a) Carbon
- b) **Methane**
- c) Oxygen
- d) Nitrogen Gas

10. Permafrost is:

- a) all the frozen water on the Earth's surface.
- b) a layer of soil frozen for two or more years.**
- c) the snow which accumulates on the surface of glaciers.
- d) the upper layer of water which freezes when in contact with cold air.

11. Which of the statements below correctly identifies the effect of the increase in the melting of ice pack due to global warming?

- a) Loss of habitat for arctic species**
- b) Lower sea levels
- c) Increase in the number of icebergs
- d) Increase in reflectivity of the Earth's surface

12. Diorite is formed from the cooling of magma below the surface of the Earth.

What type of rock is diorite?

- a) Extrusive Igneous Rock
- b) Intrusive Igneous Rock**
- c) Metamorphic Rock
- d) Sedimentary Rock

13. Different factors can affect the circulation of surface currents and deep currents in the ocean.

- 1. Temperature differences in the water
- 2. Air pressure differences in the atmosphere
- 3. Differences in the waters' salinity
- 4. The rotation of the Earth
- 5. The depth of the water

Which of the factors above only effect surface currents?

- a) 1 and 3 only
- b) 2 and 4 only**
- c) 1, 3 and 5
- d) 2, 4 and 5

14. When a cold air mass meets a stationary warm air mass, what type of weather is produced?

- a) Puffy clouds and heavy rain**
- b) Cloudy weather and light showers
- c) Tornadoes
- d) Blue skies and warm weather

15. Which of the following statements are true concerning water density?

1. Colder water sinks
2. Warmer water sinks
3. Water with a lower salinity sinks
4. Water with a higher salinity sinks

a) 1 and 3 are true

b) 1 and 4 are true

c) 2 and 3 are true

d) 2 and 4 are true

16. Explain how the greenhouse effect has a positive impact on our environment

The greenhouse gases in the atmosphere have the ability to trap the sun's heat, which increases the temperature of the planet. The sun's energy is absorbed, and some is even trapped which is distributed during the night when solar heating is unavailable.

The greenhouse effect contributes to the survival of life on Earth. Without the greenhouse effect, the temperature of the planet would be much colder, and would make Earth unlivable.

17. Samples of ocean water were collected from different depths and analyzed.

Sample	Mass of Salt	Volume of Sample
A	8.32 g	240 mL
B	7.65 g	0.225 L
C	4.20 g	115 mL

Rank these samples in order of increasing salinity. Show your work.

Sample A: $C = m/v$ $C = 8.32\text{g}/0.24\text{ L}$ $C = 34.66\text{ g/L}$	Sample B: $C = m/v$ $C = 7.65\text{g}/0.225\text{ L}$ $C = 34\text{ g/L}$	Sample C: $C = m/v$ $C = 4.2\text{ g}/0.115\text{ L}$ $C = 36.52\text{ g/L}$
In order of increasing salinity; Sample B, Sample A, Sample C		

18. Considering the risks associated with nuclear energy, the United States—the country with the greatest number of nuclear power plants in operation—voted a moratorium at the end of the 1970s, suspending the construction of any new plants. This moratorium has now been lifted, and soon new power plants will be built. What are the two main disadvantages of using nuclear energy?

- *There is a risk of a nuclear meltdown*
- *Cannot get rid of nuclear waste*
- *Uranium is a non-renewable resource*

19. A community in Gaspé is trying to choose between constructing a solar power plant and a coal power plant.

For each of the energy resources the community is considering, state:

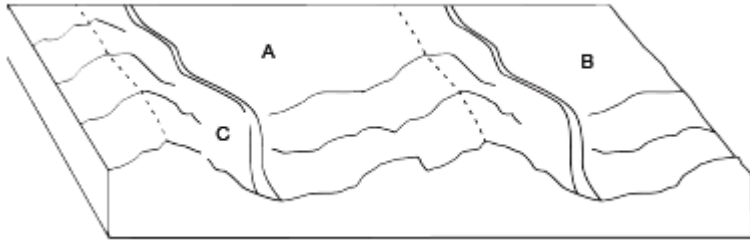
- a) Is the energy source renewable or non-renewable

Solar Energy	Coal Energy
Renewable	Non-renewable

- b) What would be the main environmental impact of each type of energy use?

Solar Energy	Coal Energy
Land Use Solar facilities can take up a lot of land area which can raise concerns about land degradation and habitat loss.	Emissions Coal combustion leads to the emission of many harmful gases including greenhouse gases (CO ₂). It also releases: - Sulfur dioxide (SO ₂), which contributes to acid rain and respiratory illnesses - Nitrogen oxides (NO _x), which contribute to smog and respiratory illnesses And it particulates, which contribute to smog, haze, and respiratory illnesses and lung disease

20. Which area(s) is/are **not** in the same catchment area as “A”. Explain your answer.



B is not in the same catchment area as A. If it rains at location B, the water will flow to a different location than if it rains at location A.

Location A and location C are in the same catchment area however, as water from both locations will end up in the same spot.