



Damietta University  
Faculty of Science  
Environmental Science Department

First Semester Exam  
Date: 14/1/2025  
Time: 2 hours

Global Environmental Issues Examination  
For 4<sup>th</sup> Year Environmental Science Students' (Course Cod: 402)

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**Question 1**

**Choose the correct answer (24 marks):**

- 1- The smaller the gap between supply and demand, the .....vulnerable a place is to water shortages.  
(a) more (b) less
- 2- If a country is using at least 20-40% of its available supply, it means it is facing.....water scarcity.  
(a) high (b) medium-high (c) low-medium (d) low
- 3- On 20 February 2022, the GERD dam produced electricity for the first time, delivering it to the grid at a rate of ..... MW.  
(a) 175 (b) 275 (c) 375 (d) 475
- 4- The GERD is located high on .....plateau.  
(a) Flat (b) An inclined
- 5-.....infrared radiation emitted from the earth surface at night.  
(a) Long wave (b) Short wave
- 6- Ice core CO<sub>2</sub> records revealed that glacial periods coincided with ..... CO<sub>2</sub> concentrations.  
(a) higher (b) lower
- 7- The Nile delta lying less than .....meters above sea level.  
(a) 5 (b) 10 (c) 15 (d) 20
- 8- Daytime urban heat island is..... than nighttime urban heat island.  
(a) higher (b) lower
- 9- During....., the trade winds weaken or even reverse direction.  
(a) El Niño (b) El Niña

10- In La Niña Mechanism, trade winds enhance the ..... of cold, nutrient-rich water along the South American coast

(a) downwelling      (b) upwelling

11-When carbon dioxide releases into the atmosphere from the ocean, it creates what is called a .....atmospheric flux

(a) positive      (b) negative

12- Up to 50% of the carbon in mangroves is stored .....

(a) above ground      (b) below ground

**Complete the following sentences: (38 marks)**

1-The Blue Nile starts from Lake .....in Ethiopia and flows into Sudan from the southeast.

2-The total water quantity in the GERD reservoir after the fifth filling is .....billion cubic meters.

3- .....records provide the most direct way to investigate past climate and atmospheric conditions.

4- Stable isotope ratio is estimated by divide  $O^{16}$  by  $O^{18}$

5- Large peaks in sulfate in the ice core identify input from..... Sources.

6- ..... periods are time intervals of warmer global temperatures (~10-20 thousand years) that separate glacial periods.

7- Atmospheric composition is measured in .....trapped in the snow.

8- Rising sea levels attributed to the vertical movement of the ocean basin are referred to as .....sea level rise, while rising from melting glaciers is known as .....sea level rise.

9- Heat waves are associated with..... pressure systems.

10- Factors influencing urban heat island are.....,.....,....., and.....

11- .....is the process of capturing and storing atmospheric carbon dioxide in carbon sinks like oceans.

- 12- Mangroves grow in areas with .....oxygen soil.
- 13- Microplastics are smaller plastic particles, typically less than ..... mm in size.
- 14- Oil companies transport it by pipes, ships, trucks, or trains to processing plants called .....
- 15- ..... are designed to float across the oil spill and sweep the oil into tanks.

**Question 2 (8 marks)**

- 1- **Discuss** Milankovitch cycles which contribute to increase global warming.
- 2- A forest ecosystem consists of the following components:
  - Aboveground biomass carbon= 500 metric tons
  - Belowground biomass carbon= 200 metric tons
  - Soil carbon stock= 300 metric tons
  - Deadwood and litter carbon=100 metric tons

Calculate the total ecosystem carbon stock.

Best wishes

**Dr. Rasha Abou Samra**