Université M[ed] Boudiaf M'sila
Faculté des sciences
Département de Physique
Date : 10 Février 2022
Master 1/S1/ Physique énergétique et énergies renouvelables
Durée : 1h30

Nom:…… *Prénom:*…… *Groupe:*……	……/20

Examen : Anglais Scientifique I

……..?

"Green" energy is clean energy that, unlike fossil fuels, is non-polluting that comes from 100% renewable sources, meaning it does not harm the environment and is more sustainable. We tend to confuse clean energies with renewable energies. The key difference is that all renewable energies are clean, but not all clean energies are renewable. For example, nuclear energy is clean because it is decarbonised and does not emit greenhouse gases into the atmosphere. However, this energy is not renewable because uranium, its fuel, is a limited resource.

There are several types of renewable energy:

- **…….. energy** is a renewable energy produced from sunlight, so it is also an intermittent energy. It takes advantage of solar energy in two ways: with photovoltaic technology and with thermal technology. Photovoltaic solar energy converts the ……..……'s rays into …… through the use of photovoltaic plates or panels, while solar thermal energy is generally used to heat fluids, such as domestic water heaters.
- **……** depends on the strength of the wind. It comes from turbines, called wind turbines or air turbines, which convert the kinetic energy of the wind into energy.
- **Hydraulic or hydroelectric energy** transforms the …… energy of water into electricity through hydroelectric plants. Like wind or solar power, hydropower is intermittent: it depends on the flow of water and on rainfall. In other words, the drier the year, the less hydroelectric energy will be produced and vice versa.
- **……** is a process that takes advantage of the Earth's natural heat and converts it into energy. It is one of the only renewable energies that is not intermittent and therefore does not depend on atmospheric conditions.
- **Biomass** is used to produce electricity and fuel (for example, biogas) from the heat released by the combustion of organic plants or animal waste, or from their fermentation. The energy from plant waste has the advantage of being carbon neutral. In fact, burning plant waste produces as many CO2 emissions as it absorbs during photosynthesis. It is important to know that ……. is only considered a renewable energy source when its consumption is less than its regeneration.

https://climate.selectra.com/en/environment/green-energy

Read carefully the text above and answer the questions below.

1- Comprehension of the text: (12pts)

- Fill the gaps in the above text.
- What is the topic of the text?

…….

- Complete the title of the text.
- Select the right statement below:

☐ Nuclear energy is not renewable and not green energy.

☐ Nuclear energy is renewable and not green energy.

☐ Nuclear energy is green and not renewable energy.

☐ Nuclear energy is green and renewable energy.

- When we can consider the biomass as renewable energy?
- ……

……..

2- Linguistic competency: (8pts)

- Propose an antonym for each word below:
  - Unlike ≠ ……..
  - Decarbonised ≠ …….
  - Non-polluting ≠ ……..
  - Limited ≠ .....
  - Intermittent ≠ …….
- Give the equivalent in Arabic for each word below:
  - Clean = ……. …
  - Fossil = ……
  - Non-polluting = ……..
  - Resource = ……
  - Photosynthesis = ……
- Translate in Arabic the below sentence from the text:

The key difference is that all renewable energies are clean, but not all clean energies are renewable.

……
……
……....

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Examen : Anglais Scientifique I

What is green energy ? (2)

"Green" energy is clean energy that, unlike fossil fuels, is non-polluting that comes from 100% renewable sources, meaning it does not harm the environment and is more sustainable. We tend to confuse clean energies with renewable energies. The key difference is that all renewable energies are clean, but not all clean energies are renewable. For example, nuclear energy is clean because it is decarbonised and does not emit greenhouse gases into the atmosphere. However, this energy is not renewable because uranium, its fuel, is a limited resource.

There are several types of renewable energy:

- (0,5) Solar **energy** is a renewable energy produced from sunlight, so it is also an intermittent energy. It takes advantage of solar energy in two ways: with photovoltaic technology and with thermal technology. Photovoltaic solar energy converts the (0,5) sun's rays into (0,5) electricity through the use of photovoltaic plates or panels, while solar thermal energy is generally used to heat fluids, such as domestic water heaters.
- (1) Wind energy depends on the strength of the wind. It comes from turbines, called wind turbines or air turbines, which convert the kinetic energy of the wind into energy.
- (2) **Hydraulic or hydroelectric energy** transforms the Kinetic energy of water into electricity through hydroelectric plants. Like wind or solar power, hydropower is intermittent: it depends on the flow of water and on rainfall. In other words, the drier the year, the less hydroelectric energy will be produced and vice versa.
- (1) Geothermal energy is a process that takes advantage of the Earth's natural heat and converts it into energy. It is one of the only renewable energies that is not intermittent and therefore does not depend on atmospheric conditions.
- **Biomass** is used to produce electricity and fuel (for example, biogas) from the heat released by the combustion of organic plants or animal waste, or from their fermentation. The energy from plant waste has the advantage of being carbon neutral. In fact, burning plant waste produces as many CO2 emissions as it absorbs during photosynthesis. It is important to know that (0,5) biomass is only considered a renewable energy source when its consumption is less than its regeneration.

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Read carefully the text above and answer the questions below.

1- **Comprehension of the text: (12pts)**

- Fill the gaps in the above text.
- What is the topic of the text?

(0,5) ..... Green energy .....

- Complete the title of the text.
- Select the right statement below:

☐ Nuclear energy is not renewable and not green energy.

☐ Nuclear energy is renewable and not green energy.

(1) ☑ Nuclear energy is green and not renewable energy.

☐ Nuclear energy is green and renewable energy.

- When we can consider the biomass as renewable energy?
- (2) ..... When its consumption is less than its regeneration .....

2- **Linguistic competency: (8pts)**

- Propose an antonym for each word below:
  - Unlike ≠ ..... Like ..... (0,5)
  - Decarbonised ≠ ..... Carbonised ..... (0,5)
  - Non-polluting ≠ ..... Polluting ..... (0,5)
  - Limited ≠ ..... unlimited ..... (0,5)
  - Intermittent ≠ ..... Continuous ..... (0,5)
- Give the equivalent in Arabic for each word below:
  - Clean = ... نظيف ..... (0,5)
  - Fossil = ... أحفوري ..... (0,5)
  - Non-polluting = ... غير ملوث ..... (0,5)
  - Resource = ... مصدر ..... (0,5)
  - Photosynthesis = ... التركيب الضوئي ..... (0,5)

- Translate in Arabic the below sentence from the text:

The key difference is that all renewable energies are clean, but not all clean energies are renewable.

(3) الفرق الرئيسي هو أن كل الطاقات المتجددة نظيفة
..... ولكن ليس كل الطاقات النظيفة متجددة .....