

Unit 5 Science and Experiment Exercise: Included all Questions and Answers (With Grammar + Writing Solution)

Reading I: Yes, You Can Boil Water at Room Temperature

A. Find the words from the text that have the following meanings.

Answer:

a. the height of an object or point in relation to sea level or ground level

Ans: altitude

b. a group of atoms bonded together

Ans: molecule

c. a state in which opposing forces are balanced

Ans: equilibrium

d. to change from a gas or vapour to a liquid

Ans: condense

e. a piece of unreliable information that is repeated so often that it is accepted as the fact

Ans: factoid

f. a space or container from which the air has been removed

Ans: vacuum

g. a device that is used to remove blockages from the drain of a basin or tub

Ans: plunger

B. Complete the sentences with the correct words or phrases from the text.

Answer:

a. Water bubbles break down if vapour **pressure** inside and outside the bubbles is equal.

b. As the altitude goes up, the boiling point of water **decreases**.

c. Random motion of molecules or particles is called **thermal motion**.

d. If the door does not open, try **jiggling** the key in the lock.

e. Certain chemicals can **induce** undesirable changes in the nervous system.

C. Answer these questions.

Answer:

a. What is the speed of the water particles compared with?

Ans: The speed of the water particles is compared with the height of a group of adult humans.

b. How are bubbles formed in the boiling water?

Ans: Bubbles are formed in boiling water when water molecules have enough energy to push back other water molecules in the liquid phase.

c. Mention two things on which external pressure depends.

Ans: External pressure depends on the depth of water and the density of water.

d. How is the atmosphere related to the pressure of water?

Ans: The atmosphere is related to the pressure of water as it contributes to the total pressure on the surface of the liquid. The atmosphere pushes down on the surface of the liquid, which increases the pressure in the liquid. So, the pressure of water is affected by both the atmospheric pressure and the pressure exerted by the water itself.

e. What would happen if the atmospheric pressure on the liquid water was decreased?

Ans: If the atmospheric pressure on the liquid water was decreased, it would also decrease the pressure in the liquid. If the pressure is reduced enough to bring it down to the same level as the vapor pressure, the water particles will have enough energy to form boiling bubbles without needing to increase the temperature.

f. What would the experimenter gain if s/he pulled the plunger out?

Ans: If the s/he pulls the plunger out, it would decrease the pressure in the liquid and induce boiling.

D. What would happen on the Earth if there were no gravity?

Answer:

Without gravity on Earth, everything would float freely, leading to weightlessness for objects and humans alike. The atmosphere would disperse into space, making it impossible to breathe without artificial life support systems.

Water bodies would break apart, causing the evaporation of oceans and lakes. The planet's structure would change, potentially resulting in fragmentation. Weather patterns would be disrupted, causing extreme temperatures and chaotic

weather conditions. Human health would suffer due to decreased bone density, muscle mass, and cardiovascular strain.

The moon and satellites would no longer orbit the Earth, and tides would cease to exist. Overall, the absence of gravity would have profound and detrimental effects on the planet and its inhabitants, rendering it inhospitable and fundamentally altering the way we live and interact with the world around us.

Grammar 1 Exercise

A. Match the clauses in Column A with their appropriate continuation in column B

Answer:

- a. If you go to Taplejung, **you can see the Pathibhara temple.**
- b. You will get well soon, **if you follow the doctor's advice.**
- c. The horse won't kick you, **unless you go behind it.**
- d. If I were you, **I would see a doctor.**
- e. What happens, **if you heat water?**
- f. I would miss the bus, **if I did not reach the bus stop on time.**
- g. Provided that they discussed properly, **they won't have misunderstanding.**
- h. As long as they communicate well, **the problem might be solved.**

B. Complete the following sentences using the correct form of verbs in brackets.

Answer:

- a. If it is cold, I **will wear** a coat.
- b. If Purna helps with the housework, his mother **will have** more time for him.
- c. If I were a bird, I **would make** a good observation of the land below.
- d. If I **went to** Mustang, I would visit Muktinath.
- e. If I **were** a billionaire, I would buy a castle.
- f. You'd save petrol if you **drove** more carefully.

- g. Say 'hello' if you **see** her.
- h. Provided that you **consent**, I will take a few days' leave next week.
- i. Take care of the pence, the pounds will **take** care of themselves.

Writing I Exercise

Write stepwise instructions to draw a jellyfish as given below. You may use the following words and phrases.

[circle, lines, semi-straight, creaky, on top of, above, below]

Answer:

Step-wise instruction to draw a jellyfish:

1. Begin by sketching a circle for the jellyfish's head.
2. Extend a line downwards from the bottom of the circle to create the body.
3. Draw several semi-straight lines extending downward from the body to represent the tentacles.
4. Make the tentacles look natural by adding some gentle curves to them.
5. On top of the jellyfish's head, draw two large circular eyes with small dots in the center as pupils.
6. Give the jellyfish a friendly expression by drawing a small smile below the eyes.
7. Enhance your drawing by adding shading or color. Consider using light blue above the jellyfish and darker blue below to create a water-like effect.

Reading II: The Voice of the Rain by Walt Whitman

A. Match the words in column A with their meaning in column B.

Answer:

- a. **eternal**: never-ending
- b. **impalpable**: not easily understood
- c. **vaguely**: unclearly
- d. **descend**: come down

- e. **lave**: to pour out as water
- f. **atomies**: indivisible particles
- g. **reck**: to take care of

B. Fill in the blanks by choosing the words given below.

[impalpable, recks, globe, drought, beautify, latent]

Answer:

- a. The river ran dry during the **drought**.
- b. It is still **impalpable** to understand how the earth originated.
- c. The company produces a wide variety of make-up and skin care products designed to gently and effectively **beautify** human skin.
- d. His greatest ambition is to sail around the **globe**.
- e. Without training, his musical talent remained **latent**.
- f. What **reck**s it whether they win or lose?

C. Complete the summary of the poem using suitable words or phrases given below.

[quenches, rhythm, mysterious, heal, atomies, condensation, ascends, showers, originality]

Answer:

The poem is a conversation between the poet and the rain. When the poem of poet asks the identity of the drizzle, she replies that she is the the Earth. The rain expresses that it gives happiness to mother Earth. The rain is a perpetual process which has different forms at different times. It rises from the land as water vapour and **ascends** high up to the sky. It takes the form of clouds. Though it changes its form or shape, its **originality** remains unchanged. It shows that nature is not fully understood. Some parts of it always remain **mysterious**.

The raindrops pour down from above to wash away **atomies** and dust layers. It **quenches** the thirst of the dry Earth and heals everything that is becoming lifeless. In other words, the **showers** make the Earth beautiful.

pure

Finally, the poet observes that the life of rain is similar to that of a song. A song also has a power to calm, **heal**, transform and thrill. In the same way, repeated evaporation and **condensation** purifies the rain. It beautifies the whole earth as a **rhythm** does to a poem or a music.

D. Answer the following questions.

Answer:

a. What are the two voices in the poem? Who do they belong to?

Ans: The two voices in the poem are: the voice of the rain and the voice of the song. The voice of the rain belongs to the earth and the voice of the song belongs to the poet's heart.

b. How is the cyclic movement of the rain shown in the poem?

Ans: The cyclic movement of the rain shown in the poem is as follows: It goes up being evaporation, condenses when cooled in the sky and falls in the form of rain again.

c. Why are the showers necessary for the Earth?

Ans: The showers are necessary for the Earth to wash the atomies and to quench the thirst.

d. How are the rain and music similar?

Ans: Both the rain and music are similar in the sense that the music heals people and the rain heals the earth. And both of them have rhythm.

e. How are the clouds formed?

Ans: The clouds are formed when the vapor goes up in the sky and condenses.

f. List the pairs of opposite words in the poem.

Ans:

rise-falling heaven-earth

day-night

unborn– life

D. What may happen on the Earth if it does not rain for a long time?

Discuss in a group.

Answer:

If there is an extended period without rainfall, several consequences can occur on Earth. Here are some major effects to consider:

Drought: The absence of rain for a prolonged period can result in drought, causing significant impacts on agriculture and leading to food shortages. It can also lead to water scarcity, affecting both humans and animals.

Forest Fires: Dry vegetation becomes highly vulnerable to fires, and the lack of rainfall can increase the frequency and intensity of wildfires. This poses risks to ecosystems, habitats, and human settlements.

Soil Erosion: Without rainfall, soil can dry out, making it more prone to erosion. This can have detrimental effects on agriculture and natural habitats, impacting plant growth and ecosystem stability.

Heat Waves: The absence of rain can contribute to rising temperatures, triggering heat waves. These prolonged periods of extreme heat can negatively affect human health, wildlife, and the overall balance of ecosystems.

Water Scarcity: Reduced or no rainfall can lead to the depletion of water sources such as lakes, rivers, and groundwater. This scarcity of water availability can lead to a lack of drinking water for both humans and animals, posing significant challenges for communities.

In summary, a prolonged absence of rainfall can result in severe and long-lasting consequences for the environment and human societies, affecting agriculture, water resources, ecosystems, and overall well-being.

Grammar II Exercise

Here, you can find **Class 10 English Unit 5 Reading 2 grammar 2 exercise** based on new curriculum set by government of Nepal on 2080:

A. Complete the following sentences using the correct form of verbs in brackets.

Answer:

a. If Gaurab were the captain, the team ... (play) better.

Ans: would play

b. I(call) you had I known you were in Nepal.

Ans: would have called

c. If he(not/come) to Nepal, he would not have seen Mt. Everest.

Ans: had not come

d. Had you arrived a bit earlier, you... . . .(see) Manashi.

Ans: could have seen

e. We could slow down global warming if we...(reduce) energy consumption.

Ans: reduced

f. If he were to see me, he(know) me at once.

Ans: would know

g. Were Rijisa in the USA, she... .. (be) working for a company.

Ans: would be

h. How would you feel if someone(ask) you for an autograph?

Ans: asked

i. What....(you/do) if Keshab had proposed you for marriage?

Ans: would you have done

j. If I(have) a life jacket, I could certainly swim across the river.

Ans: had

Writing II Exercise

A. Study the following letter to the editor of a national daily complaining about the shortage of water in Kathmandu.

Answer:

Koteshwor, Kathmandu

19 May 2022

The Editor,

The Rising Nepal

Dharmapath, Kathmandu

Dear Sir,

I am writing this letter to bring your immediate attention to the critical problem of water scarcity that our locality is currently facing. The residents have been grappling with water shortages for an extended period, and if this issue remains unaddressed, it may escalate into conflicts among people struggling to obtain even small amounts of water.

The existing water tank fails to hold an adequate supply to meet the needs of the residents. Compounding the problem, the majority of residents are not practicing water conservation. Water wastage during activities such as bathing, laundry, dishwashing, and gardening is widespread.

In light of these circumstances, I have a few suggestions that I believe can help resolve the problem promptly. I kindly request you to arrange a general meeting of the residents to discuss this issue thoroughly. Additionally,

leveraging local cable TV and community radio to disseminate the message of water conservation among the residents would be highly beneficial. Conducting door-to-door campaigns can significantly raise awareness about the importance of conserving water during daily activities.

I propose inviting water conservation experts to enlighten us about various methods and technologies available for water preservation. Promoting the practice of reusing water within our community is another crucial step we should encourage. Rainwater harvesting techniques, if implemented, would undeniably alleviate the crisis to some extent.

In conclusion, I sincerely hope that immediate steps will be taken to address this pressing issue. The cooperation and support of the concerned authorities are vital to finding a sustainable solution.

Thank you for your attention and consideration.

Yours faithfully,
Arjun Mandal

B. Write a letter of complaint to the concerned authority about the unmanaged garbage in your locality. Mention the hazards of unmanaged garbage to public health and suggest some measures to solve the problem.

Answer:

Date: 1/15/2023

To,

The Mayor,

Kathmandu Metropolitan city, Kathmandu, Nepal

Dear Sir/Madam,

I am writing this letter to express my deep concern about the escalating problem of unmanaged garbage in our locality, specifically in Sinamangal. Over time, there has been a noticeable increase in the amount of scattered garbage, which has reached an alarming level. This situation poses a severe threat to public health and demands immediate action.

Regrettably, the garbage in our area is not being collected regularly, leading to overflowing bins. Consequently, the streets have become littered with trash, creating not only an eyesore but also a breeding ground for pests and diseases.

Moreover, the pervasive foul smell makes it extremely difficult for residents to live comfortably in the area.

I implore you to take prompt and decisive action to address this pressing issue. The garbage collection system urgently requires improvement, with regular and timely emptying of bins. Additionally, it is imperative that the authorities implement measures to ensure proper disposal of the garbage, preventing it from being left strewn on the streets.

Furthermore, I kindly request regular inspections of the area to ensure effective management of the garbage. Organizing awareness campaigns would also be beneficial in educating the public about the significance of proper garbage disposal and its impact on public health.

I sincerely hope that my concerns are taken seriously, and that the necessary steps are taken to rectify this problem promptly. Your swift action in this matter would be greatly appreciated. I eagerly await your response.

Thank you for your attention to this matter.

Yours faithfully,
[Your Name]