

"Science"

NEW ERA PUBLIC SCHOOL

Subject :- Science

Topic :- Microorganisms: Friend and Foe

Class :- 8th

Lesson no :- 1

Solved Assignment of Unit-I

→ Answer the following Questions:-

Q4:- Can microorganisms be seen with the naked eye? If not, how can they be seen?

Ans:- No, microorganisms cannot be seen with the naked eye. They can be seen only with the help of microscope.

Q5:- What are the major groups of microorganisms?

Ans:- The major groups of microorganisms are:-

1. Bacteria
2. Fungi
3. Protozoa
4. Some algae.

Q6:- Name the microorganisms which can fix atmospheric nitrogen in the soil?

Ans:- Some bacteria like Rhizobium and blue-green algae are able to fix nitrogen from

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~~"Rhizobium"~~

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the atmosphere and increase the fertility of the soil. These microbes are commonly known as biological nitrogen fixers.

Q7:- Write 10 lines on the usefulness of microorganisms in our lives.

Ans:- Microorganisms are used for various purposes. They are very useful in our lives. Some of their uses are mentioned below:-

1. The bacterium lactobacillus promotes the formation of curd.
2. The bacteria is also involved in making cheese, pickles and many other food items.
3. Yeast is used for commercial production of alcohol and wine.
4. Yeast is also used in baking bread, cake etc.
5. Microorganisms are used for the manufacturing of antibiotics.
6. Vaccines for various diseases are made from microorganisms to protect human beings and animals.
7. Some bacteria like Rhizobium and blue-green algae are able to fix nitrogen from the atmosphere and increase the fertility of

the soil.

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8. Some microorganisms decompose the organic waste and dead plants and animals into simple substances and clean up the environment.

9. The bacteria in our intestine help in digestion of food.

10. The algae are the food for some breeds of fish.

Q.:- Write a short paragraph on the harms caused by microorganisms.

Ans:- Although microorganisms are useful for us but there are some microorganisms which are harmful for us. Microorganisms cause diseases in human beings, plants and animals. Some microorganisms spoil food, clothing and leather. Some of the diseases caused by microorganisms are cholera, common cold, chicken pox, tuberculosis etc. There are some insects and animals which act as carriers of disease causing microbes. Some microorganisms cause diseases in plants like rice, wheat, orange, potato, sugarcane etc. Microorganisms that grows on our food sometimes produces toxic substances which are poisonous and

causes illness and even death.

Q9:- What are antibiotics? What precautions must be taken while taking antibiotics?

Ans:- The medicines produced by microorganisms that kill or stop the growth of a disease are called antibiotics. There are number of antibiotics that are being produced by bacteria and fungi. The precautions which must be taken while taking antibiotics are :-

1. They should be taken on the advice of a qualified doctor.
2. We must complete the course prescribed by the doctor.

→ Objective Type Questions:-

1. Fill in the blanks:-

- a) microscope b) nitrogen c) yeast
d) bacteria.

2. Tick the correct answer:-

- | | |
|-------|--------|
| a) ii | d) ii |
| b) ii | e) iii |
| c) i | f) iii |

3. Match the organisms in Column I with their action in Column II. (05)

Column I

- (i) Bacteria
- (ii) Rhizobium
- (iii) Lactobacillus
- (iv) Yeast
- (v) A protozoan
- (vi) A virus

Column II

- Causing cholera
- Fixing Nitrogen
- Setting of curd
- Baking of bread
- causing Malaria
- Causing AIDS

→ Draw and practice the following diagrams:-

1. Algae (Chlamydomonas, Spirogyra), Protozoa (Amoeba, Paramecium) and Fungi (Bread mould, Aspergillus) Fig 1.4 on Pg. no 2
2. Nitrogen Cycle Fig 1.10 on Pg. no 10

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Topic :- Stars and the Solar System

Lesson no. :- 15

3. Answer the following questions:-

(i) What is universe? Name six different kinds of heavenly bodies found in the universe?

Ans:- Universe is the vast un-imaginable space which has in it distant stars, planets and all other things that exist.

Heavenly bodies of the Universe are Earth, Moon, Planets, Sun, Stars, Meteors and Comets.

(ii) With the reference to the average distance from the sun, state

a) the serial number of the planet earth.

Ans:- The serial number of the planet Earth is three.

b) the average distance of the earth from the sun.

Ans:- The average distance of the Earth from the Sun is 150 million Km.

c) the time in which the sunlight reaches the earth?

Ans:- Time taken by light to reach earth is 8.3 minutes.

iii) a) Name the natural satellite of the earth? (02)

Ans:- The natural satellite of the earth is Moon.

b) In how many days does this satellite complete one revolution around the earth?

Ans:- $27\frac{1}{3}$ days.

c) In how many days does this satellite rotate around its own axis?

Ans:- $27\frac{1}{3}$ days.

d) How does the gravity of this satellite compare with the earth?

Ans:- Since the mass of the earth is about 81 times that of the moon, so the gravitational force of the earth is greater than that of moon and the gravitational force of the moon is $\frac{1}{6}$ th of the earth.

e) State the maximum temperature on the day side and minimum temperature on the night side of this satellite?

Ans:- The maximum temperature on the day side of this satellite moon is about 110°C and the minimum temperature on the night side is -150°C /

(iv) What do you understand by the following terms:-

Ans:- (a) New Moon:- The new Moon is the phase of the moon when the moon is not visible from Earth, because the side of the moon that is facing us is not being lit by the sun. When the Moon is roughly in the same direction as the sun, its illuminated half is facing away from the Earth, and therefore the part that faces us is all dark and we have the new moon. When in this phase, the Moon and the Sun rise and set at about the same time.

(b) Full Moon:- Two weeks after the new moon, the moon is now halfway through its revolution, and now the illuminated half coincides with the one facing the Earth, so that we can see a full disk: we have a full moon. At this time, the Moon rises at the time the Sun sets and it sets when the Sun rises. If the Moon happens to align exactly with the Earth and Sun, then we get a lunar eclipse.

(v) Define solar system?

Ans:- The system in which eight planets, their satellites and thousands of other smaller heavenly bodies such as asteroids, comets and meteors revolve around the sun is called solar system or solar family.

(b) Name all the planets in the solar system in the order of their distance from the sun.

Ans:- The planets that include solar system according to their distance from the sun are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune.

(vi) a) How many moons mars have?

Ans:- Mars have two moons.

b) Write the name of these moons?

Ans:- Phobos (22 Km across) and Deimos (13 Km across)

(vii) What is comet? Why does a comet develop a tail while approaching the sun?

Ans:- A comet is a collection of gases and dust which appears as a bright ball in the sky with a long glowing tail made of gases that include ammonia and methane also. The tail of comets always points away from the sun. The period of revolution of comets around the sun is very large. The outer portions of the comet (mostly water and frozen gases) start to vaporize as it gets heated by the sun. This vapour tail then streams out away from the sun due to the solar wind (particles streaming out from the sun) as the comet approaches the sun.

(viii) What is star? What makes the star give about

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Vast amount of energy?

Ans:- Stars are the heavenly bodies that are extremely hot and incandescent (i.e. they have their own light). Stars are in reality huge glowing balls of hot gases and are mainly made up of hydrogen. They contain some helium and dust. It is the nuclear reaction (nuclear fusion) that converts hydrogen into helium due to which stars give out vast amount of energy in the form of heat and light.

(ix) a) How are meteors different from stars?

Ans:-

Star

Shooting star (Meteors)

1. The materials of the stars mostly consist of hydrogen and helium.

1. The material of a shooting star is mostly made of rocks, metals and dust.

2. Stars produce heat energy and light energy due to the fusion of hydrogen nuclei.

2. The shooting stars produce heat energy and light energy due to the friction of the earth's atmosphere.

3. Stars are extremely big.

3. The shooting stars are very small pieces of rocks.

4. Stars last for billions of years.

4. Meteors last for a few seconds.

(b) How are meteors different from meteorites? (11)

Ans:-

Meteors

1. The heavenly bodies in the sky which are seen as the bright streaks of light passing across the sky are called as meteors.

2. They are also called as shooting stars actually they are not stars but pieces of dust and metal.

3. They are mainly composed of stones or metals.

4. They are usually smaller in size.

Meteorite

1. Meteor which does not burn completely on entering the earth's atmosphere and strikes the surface of earth is called as meteorite.

2. Size of meteorites varies from a size of a pebble to big blocks having weight in tonnes.

3. They are mainly composed of metal and rocks.

4. They are usually bigger in size.

1. Fill in the blanks by choosing correct words from the following list:-

→ KEY

(i) Universe

(v) Pluto

(ii) meteorite

(vi) comet

(iii) planets

(vii) core

(iv) satellites/Moon

(viii) constellation

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2. Statements given below are incorrect. Write correct statements. (12)

Correct statements:-

- (i) Halley's Comet visits our solar system after 76 years.
- (ii) Hydrogen gas constitutes most of the atmosphere of the sun and the stars.
- (iii) Alpha Centauri is nearest to our solar system.
- (iv) Astronomers have divided the sky into 88 constellations.
- (v) Meteors on burning leave behind dust and light.
- (vi) The orbit of Pluto is different from the orbits of the other planets in the solar system.
- (vii) Venus is the second planet nearest to the sun.
- (viii) Moon revolves around the earth in $27\frac{1}{3}$ days.

→ Answer the following questions (Pg. no 190)

Q1:- What are celestial bodies? Name any three celestial bodies?

Ans:- The natural objects which are located outside the earth's atmosphere in the space, such as the Moon, the sun, asteroids, planets or stars are

called as celestial bodies or heavenly bodies. (13)

Q2:- Why do you classify the sun as a star?

Ans:- The sun is being classified as a star as it produces its own heat and light due to the nuclear reaction known as nuclear fusion of hydrogen gas in its core. It is a medium order star in terms of its mass and brightness.

Q3:- Why do the stars appear like point objects?

Ans:- The stars appear to us like point objects because they are very far away from the earth. Most of the stars are so much far away, that the light from them takes millions of years to reach the earth.

Q4:- What is a constellation? How does the constellation differ from a star?

Ans:- A group of stars which is arranged in some pattern resembling some recognizable figure is called a constellation. There are about 88 constellations known to us. whereas stars are the heavenly bodies that are extremely hot and incandescent (i.e. they have their own light)

Q5:- Name a star which appears stationary from the earth? In which constellation is it

situated?

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Ans:- Pole star appears stationary from the earth. It is situated in the constellation known as Ursa Minor.

Q6:- What is a "light minute"? How many light minutes is the earth from the sun? Express this distance in Kilometers?

Ans:- A light minute is defined as the distance travelled by the light in one minute at a speed of 3×10^5 Km/s

$$\text{Speed of light} = 3 \times 10^5 \text{ Km/s}$$

$$\text{No. of seconds in one minute} = 1 \times 60 \text{ second}$$

$$\therefore 1 \text{ light minute} = 3 \times 10^5 \times 1 \times 60 \text{ Km}$$

$$1 \text{ light minute} = 18,000,000 \text{ Km} = 18 \times 10^6 \text{ Kilometers}$$

The earth is about 8.3 light minutes away from the sun which is about $8.3 \times 18,000,000$ Km
i.e. 149400000 Km or 1.494×10^8 . ($\approx 1.5 \times 10^8$ Km)

Q7:- How much time is involved from one new moon to another new moon as seen from the surface of the earth?

Ans:- 29 $\frac{1}{2}$ days.

Q8:- In how much time does the moon complete one rotation about its own axis?

Ans:- It takes 27.3 days for moon to complete one rotation about its axis. (15)

→ Answer the Questions (Pg no 197)

Q1:- What is a planet? How many planets revolve around the sun?

Ans:- Planets are the heavenly bodies that revolve around the sun in elliptical orbits. They do not have their own light. They shine on falling of sunlight on their surface. They are made of rocks and metals. There are 8 planets revolving around the sun.

Q2:- Name the planet which
(i) is nearest to the sun

Ans: Mercury

(ii) is farthest from the sun

Ans:- Neptune

(iii) supports life?

Ans:- Earth

Q3:- Name the planet which revolves round the sun from east to west?

Ans:- Venus revolves round the sun from east to west direction.

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Q4:- Name one planet that was predicted before its discovery?

Ans:- Neptune is the planet that was predicted before its discovery.

Q5:- Name the planet having the largest number of moons.

Ans:- Jupiter has the maximum number of moons i.e. 67

Q6:- Name a system of number of rings?

Ans:- A system of number of rings is around the Saturn.
