

Name: Hnuj Sapkota
Class: 8th Gr
Subject: Science

First Term Examination - 2077

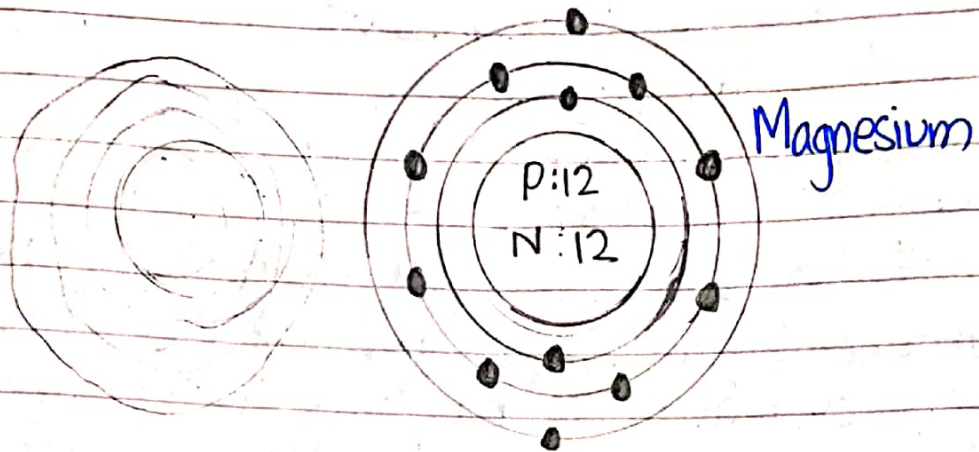
- 1) Convert the followings as instructed: ($0.5 \times 4 = 2$)
 - a) 86400 seconds to minutes.
 - b) 2050 gram to kilogram.
 - c) 100°C into Kelvin
 - d) 40°F into Celsius
- 2) Define the term units and write down the SI unit of amount of substance and luminous intensity. ($1+1=2$)
- 3) Write any two differences between mass and weight. (2)
- 4) What do you mean by 1-meter distance? Why is quartz clock more accurate than pendulum clock? ($1+2=3$)
- 5) Is temperature a fundamental unit or derived unit? Give reason for your answer. (1)
- 6) Write any two differences between atom and molecule. (2)
- 7) Calculate the molecular mass of the following compounds: - ($1+1=2$ $4 \times 1 = 4$)
 - a) Water
 - b) Carbon dioxide
 - c) Sodium chloride
 - d) Calcium chloride
- 8) Define symbol and name any two elements whose symbol is derived from their Latin name? (2)
- 9) Give reason for the following statements: - ($3 \times 2 = 6$)
 - a) Mass of electron is not included while calculating the mass of an atom.
 - b) Group I elements are more reactive than Group II elements.

(1)

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c) Neon is called an inert gas.

10)



Observe the above diagram and answer the questions asked below:- (0.5x4=2)

- a) Calculate the atomic mass of the element.
 - b) Write down its group ~~no.~~ number in the modern periodic table.
 - c) Write down its period number in modern periodic table.
 - d) Draw its electronic configuration.
- 11) Differentiate between bacteria and virus. (2)
 - 12) Why is virus called obligatory parasite? (2)
 - 13) Name any two fungi from which antibiotics are obtained. (1)
 - 14) Name any two viruses which has caused pandemic in the world. (1)
 - 15) Draw well ~~labeled~~ labelled diagram of monocot seed. (3)

[2]

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- 16) Write any two importance of dispersal of seed. (1)
- 17) Some seeds do not germinate even after getting all the requirements for germination. Why? (2)
- 18) For what purpose does the following plant's leaf is modified? (1+1=2)
- 19) Write any four properties of minerals. (2)
- 20) Write down ores of the following minerals: (4×5=20)
a) Iron b) Copper c) Lead d) Zinc
- 21) Draw a well labelled and colored diagram of soil profile. (4)
- 22) Availability of minerals determine the prosperity of a nation. Explain the statement. (2)

Answers:

- 1)
- a) → Solⁿ,
Here,
86400 seconds to minutes,
We have,
 $60 \text{ seconds} = 1 \text{ minute}$
or, $1 \text{ second} = \frac{1}{60} \text{ minute}$
or, $86400 \text{ second} = \frac{86400}{60} \text{ minutes}$
 $\therefore 86400 \text{ Seconds} = 1440 \text{ minutes}$

③

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b) $\rightarrow$ Soln,

Here,

We have, 2050 gram to kilogram,

$$1000 \text{ gram} = 1 \text{ kg}$$

$$\text{or, } 1 \text{ g} = \frac{1}{1000} \text{ kg}$$

$$\text{or, } 2050 \text{ g} = \frac{2050}{1000} \text{ kg}$$

$$\therefore 2050 \text{ g} = 2.05 \text{ kg}$$

c) ~~100°C~~ $\rightarrow$ Soln,

Here,

$$C = 100$$

$$K = ?$$

We have,

$$\frac{C - 0}{100} = \frac{K - 273}{100}$$

$$\text{or, } \frac{100 - 0}{100} = \frac{K - 273}{100}$$

$$\text{or, } \frac{100}{100} = \frac{K - 273}{100}$$

$$\text{or, } K - 273 = \frac{100 \times 100}{100}$$

$$\text{or, } K - 273 = 100$$

$$\text{or, } K = 100 + 273$$

$$\therefore K = 373$$

$$\therefore 100^\circ\text{C} = 373\text{K}$$

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d) → Soln
Here,

$$F = 40$$

$$C = ?$$

We have,

$$\frac{F - 32}{180} = \frac{C - 0}{100}$$

$$\text{or, } \frac{40 - 32}{180} = \frac{C - 0}{100}$$

$$\text{or, } \frac{8}{180} = \frac{C}{100}$$

$$\text{or, } C = \frac{8 \times 100}{180}$$

$$\text{or, } C = \frac{80}{18}$$

$$\therefore C = 4.44$$

$$\therefore 40^\circ\text{F} = 4.44^\circ\text{C}$$

2) → Units are the known standard quantity which are used for the comparison of an unknown physical quantity.

→ The SI unit of:

- Amount of substance is mole (mol.).

- Luminous intensity is candela (Cd)

3 →

→

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Mass	Weight
- Mass is the total amount of matter contained in a body.	- Weight is the measurement of the gravitational pull on an object.
- Mass is constant quantity. So, it is same everywhere.	- Weight is a variable quantity. So, it def varies from place to place.

4) → 1 meter distance is the distance travelled by light in vacuum in 3×10^8 second.
 → Quartz clock is more accurate than pendulum clock because pendulum clocks can fluctuate due to climatic condition but quartz clock doesn't.

5) → Temperature is a fundamental unit because it is independent of other and not definable in terms of other quantities.

Atom	Molecule
- Atom is the smallest particle of an element.	- Molecule is the smallest particle of an element or compound.
- It may or may not exist freely.	- It exists freely.

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7)

a) Water = H_2O

→ Soln

Here,

$$\begin{aligned}\text{Molecular mass} &= 2 \times H + 1 \times O \\ &= 2 \times 1 + 1 \times 16 \\ &= 2 + 16 \\ &= 18 \text{ amu.}\end{aligned}$$

b) Carbon dioxide = CO_2

→ Soln

Here,

$$\begin{aligned}\text{Molecular mass} &= 1 \times C + 2 \times O \\ &= 1 \times 12 + 2 \times 16 \\ &= 12 + 32 \\ &= 44 \text{ amu.}\end{aligned}$$

c) Sodium Chloride = $NaCl$

→ Soln

Here,

$$\begin{aligned}\text{Molecular mass} &= 1 \times Na + 1 \times Cl \\ &= 1 \times 23 + 1 \times 35 \\ &= 23 + 35 \\ &= 58 \text{ amu.}\end{aligned}$$

d) Calcium Chloride = $CaCl_2$

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⇒ Solⁿ

Here,

$$\begin{aligned}\text{Molecular mass} &= 1 \times \text{Ca} + 2 \times \text{Cl} \\ &= 1 \times 40 + 2 \times 35 \\ &= 40 + 70 \\ &= \underline{110 \text{ amu}}\end{aligned}$$

8. → Symbol is the abbreviation of the name of an element in the periodic table which is represented by 1 or 2 English letters.

→ Any two Elements whose symbol is derived from their latin name is:

(i) Iron = Ferrum [Fe]

(ii) Copper = Cuprum [Cu]

9)

a) → Mass of electron is not included while calculating the mass of an atom because the mass of electron is very less compared to other sub-atomic particles.

b) Group I elements are more reactive than Group II elements because group I elements can easily donate electrons compared to group II elements.

c) Neon is an inert gas because neon is completely in octet state and already stable.

(8)

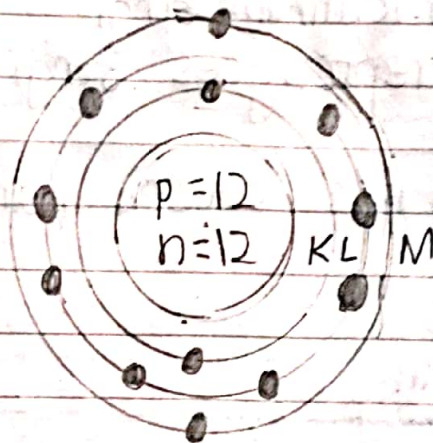
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10) a) Atomic mass = $p^+ + n^0$
 $= 12 + 12$
 $= 24 \text{ amu}$

b) Its group no. is group II in modern periodic table.

c) Its period no. is period 3 in modern periodic table.

d)



Shells :	K	L	M	N
Number of e ⁻	2	8	2	X

11 →

Bacteria

Virus

- Bacteria is the most wide-spread single-celled microscopic plant organism.

- Virus is the most primitive and acellular microscopic organism.

- They show metabolic activities

- They do not show metabolic activities.

12) Viruses are called as obligatory parasite because

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they can reproduce ^{only} while being inside a living cell of the host and cannot reproduce while being outside of a living cell.

13) → Any ~~two~~ fungi that are used from which antibiotics is obtained is:

- Penicillium fungi
- Streptomyces fungi

14) Any two viruses which has caused pandemic in the world are;

- Coronavirus
- Spanish flu

15) →

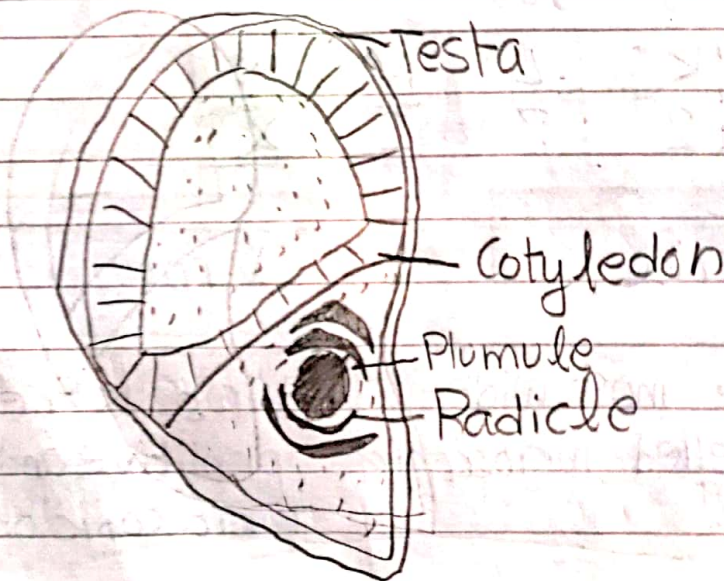


Fig: Monocot seed [Maize]

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16) ~~Seed dispersal~~ Any two importance of seed dispersal is;

- If there is no dispersal of seed, plants will grow ~~close~~ together, they have to fight for water and minerals. So, seed dispersal allows plants to grow in a wide area.
- The seeds can be weak if there is no seed dispersal.

17) Some seeds do not germinate even after getting all the requirements for germination because some seeds don't have well developed embryo.

18) 1st picture;

Name: Venus Fly trap

- They have modification of their leaves because ~~they~~ the ~~mo~~ in order to catch their prey i.e. insects.

2nd picture:

Name: Opuntia

- They have modification of their leaves ^{to spines} in order to reduce ^{loss of} water by reducing loss rate of transpiration.



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19) Any four properties of minerals are:

- Minerals have their own color.
- Generally, they are lustrous.
- Mostly, they are hard.
- They are crystalline substances.

- 20) a) Iron ore = Haematite
b) Copper ore = Chalcopyrite
c) Lead ore = Galena
d) Zinc ore = Sulphide

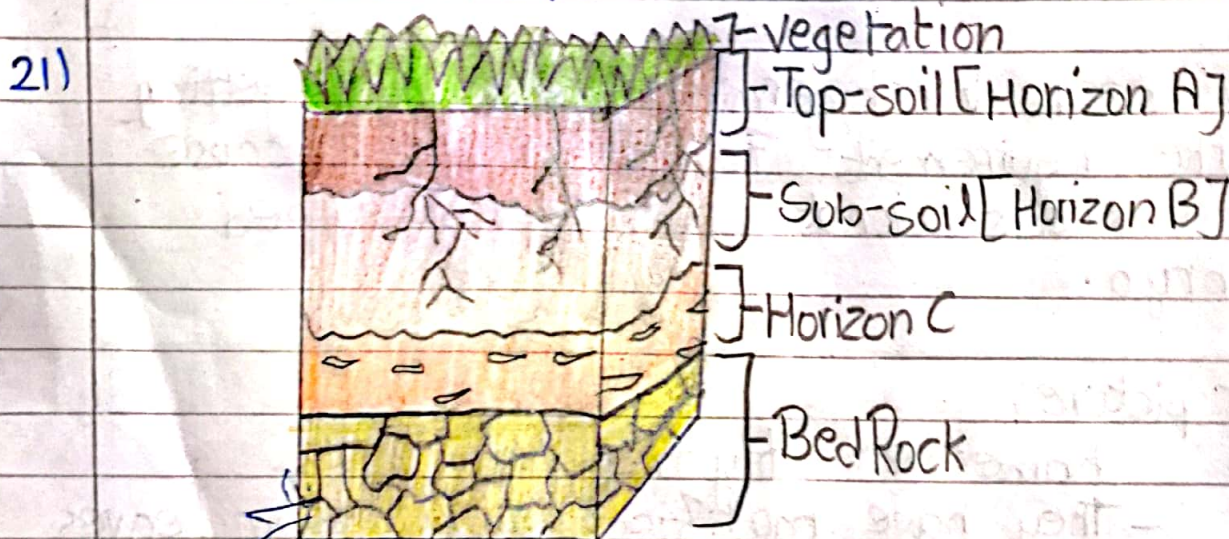


Fig: Soil profile.

22) Availability of minerals determine the prosperity of a nation. ~~Explain the statement.~~ (2) because minerals are used in construction of bridges, buildings, etc. which help in the development of a country. And, the country can sell the minerals to be rich. We can take an example of Arabia, they have sold minerals to be very rich and developed. (Saudi) Therefore, minerals determine the prosperity of a nation.