

Section - 1.

DATE: _____

DAY: _____

Q No 2

a)

Measures should be taken to counter it in COP-29.

1) Reduction in excessive burning of fossil fuels.

As per IPCC, burning of fossil fuels is primary cause behind global warming, it contributes more than about half of total global warming. Therefore, in COP28, phase out of fossil fuels must be ensured.

2) Mechanism to ensure massive plantation.

Plant are called carbon sinks, unfortunately as the population of world is increasing, at the same speed forest cover is decreasing. Therefore, it is recommended that there must be a global mechanism who ~~enforce~~ implement the policies related to plantation in whole world.

3) ^{Encourage} usage of electric vehicles.

vehicles are consuming a lot of fuel and emitting greenhouse gases in enormous amount. To

end this course, electric vehicles must be encouraged which can prevent us from rising global temperature.

4) ~~The~~ Immediate transition to renewable sources of energy. At the COP28, there must be talks on transition to renewable sources of energy because it has several preventive impacts, like preventing the fossil fuels from burning, health of people, economy etcetera.

5) Encouraging of pragmatic solid-waste management.

World has several researchers and scientists. Therefore, all such professionals must be consulted in COP28 who introduce some pragmatic mechanism for solid-waste management. After that, international community must play a role in implementation of such policies.

b)

?

Ans 1) Arteries ::

- ⇒ Arteries are type of blood vessels which carry blood from heart to rest of the body.
- ⇒ These carry oxygenated blood.
- ⇒ Blood pressure always remain high in arteries.
- ⇒ These carry unfiltered blood toward kidney for filtration.

2) Veins

- ⇒ The blood vessels which carry body to heart.
- ⇒ These carry deoxygenated blood.
- ⇒ Blood pressure always remain low in veins
- ⇒ These carry ~~unfilter~~ filtered blood from kidney

3) Capillaries.

- ⇒ Capillaries are very thin blood vessels which are junctions between ~~to~~ arteries and veins.
- ⇒ These carry oxygenated and deoxygenated blood.
- ⇒ Blood pressure remain low in these.

c)

?

Ans:-

Atoms form bond to maintain their stability. It is the strong electrical force that holds the atoms together in a molecule.

⇒ Atoms always used to remained highly stable that's why they form bonds with other atoms.

⇒ There are two theories which define bonding of atoms.

1) Duplet rule theory

According to this theory, atoms want to be stable by having two ^{electrons} in their outer most shell.

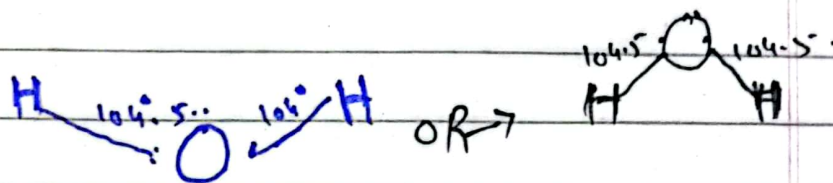
⇒ This theory is only valid for Hydrogen and Helium.

2) Octet rule theory

Atoms, according to this theory want to keep eight electrons in their outer most shell.

⇒ All atoms elements as well noble gases except Helium and hydrogen are valid for this theory.

Structure of water



According to the structure, two hydrogen atoms always form bond with one atom of oxygen at an angle of 104.5°

d)

?

Ans: 1) Conductors:

Those materials which have a free electron. Due to the presence of this free electron these materials conduct electricity and heat as well.

⇒ For ex: Aluminium, Copper, Gold

2) Semiconductors.

Those materials which have properties in between the conductor and non-conductors.

→ ^{Element} ~~Atoms~~ of group four in periodic table are semiconductors.

For examples:- Silicon, Germanium etc..

3) Metals :-

Those materials in periodic table which conduct heat and

electrocity
=> Metals are hard and brittle.

=> Metals ~~are~~ always form ionic bond which reacted with non-metals are Halogens.

Exp:- Sodium, Mg, Calcium etcetera.

4) Plastics.

These are the materials which can be easily moulded.

=> Thermosetting plastics are those which can not be moulded

=> Thermoplastic plastics are those can be easily moulded, hardened or cooled.

Exp:- Shoppers, bottles, etcetera.

5) Ceramics.

These These materials are formed from ~~the~~ some pieces of Clay. When Clay is extremely heated at very high temperature. Then new material formed which is called Ceramics.

Exp:- Bricks.

Q No 4)

?

Ans:.

Sources of renewable energy in Pakistan.

- 1) solar energy.
- 2) wind energy.
- 3) Hydal energy
- 4) Tidal energy.
- 5) Geo-thermal energy
- 6) Biofuels.

"Pakistan's renewable energy resources have potential to produce 3300 Gw electricity"
 Policy frame work to utilize these. (SIFC model)

1) lengthy coastal area in Pakistan.
 Pakistan has a lengthy coastal area along arabian sea, which is 1046 km long. Pakistan can utilize it by producing wind energy from this area.

2) Provision of Rivers.
 Pakistan many rivers, one of which is very long know as Indus river basin. Therefore, Pakistan has to construct more Dams and complete the construction of unconstructed Dams.

3) Utilizing Arabian sea Tides.

Tides are the sources of power generation, and during full moon the intensity of tides is very high in Arabian sea. Government must get benefits of generating electricity from these tides.

4) Longest desert Areas

Palestine has multiple deserts but most prominent are Negev and Sinai. Therefore, Government firstly complete already uncontracted solar projects. Secondly, increase solar panels and built new projects in desert areas.

b) Structure of sun.

⇒ Sun is made up of internal and external layers.

1) The Core: It is central layer, which is called center of sun. Fusion reaction takes place here in the core.

⇒ Temperature of core is 15 million degree Celsius.

DATE: _____
2) Radiative zone: After Core there is a radiative zone through which Sun's energy is transferred to convective zone.

3) Convective Zone: It is the zone where Sun's temperature starts to be decreased.
⇒ It is after the radiative zone.

4) Chromosphere: It is the outer layer of sun, where the radiations of sun starts to be coming down to the earth.

5) ~~It is said to~~

5) Photosphere: It is said to be the layer in sun's atmosphere. From here Sun's radiations starts. glowing
⇒ Temperature at Sun's atmosphere is 5500°C .

c) ~~?~~ ?

Ceramics.

It is the material formed from clay when it burnt at very high temperature.
⇒ These materials are very hard

in the nature.

For ex: cups, Bricks etc.

Possibility of recycling.
When it comes to ceramics,
it is sometimes possible recycle
it, but most probably it cannot
be recycled. The main reason
behind this is, when a
material is heated at
very temperature, it loses
its most of the properties.
It attains the shape of
an other material like clay,
is in bricks or cups etc.

DATE: _____

SECTION = II.

DAY: _____

Q no 6

a)

Solution:

Total population of a village = 18,000

Increased in a decade to = 22,500

% increase per year = ?

Using formula of % increase.

$$\% \text{ increase} = \frac{\text{Increased population} - \text{Population before}}{\text{Population before}} \times 100$$

Putting values in formula.

$$\% \text{ increase} = \frac{22,500 - 18,000}{18,000} \times 100$$

$$\% \text{ increase} = \frac{22,500 - 18,000}{18,000} \times 100$$

$$\% \text{ increase} = \frac{3}{12} \times 100 = \frac{300}{12} = 25$$

% increase in a decade = 25%

Now per year increase is

$$\text{Per year increase} = \frac{25}{10} = 2.5\%$$

Therefore,

$$\boxed{\text{Per year \% increased} = 2.5\% \text{ Ans.}}$$

DATE: _____

DAY: _____

b)

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solution:

Machines	Days	units
20 ↑	9 ↑	600
18	12	x

Therefore,

$$\frac{x}{600} = \frac{12}{9} \times \frac{18^2}{20^2}$$

$$\frac{x}{600} = \frac{3}{1} \times \frac{2}{5}$$

$$\frac{x}{600} = \frac{6}{5}$$

$$x = \frac{6 \times 600}{5} \Rightarrow \frac{3600}{5} = 720$$

$$\boxed{x = 720}$$

⇒ 720 units will be made
in 12 days with 18 machines.

c)

?

Solution.

\Rightarrow A car covers = 450 m in 1 minute
change distance in km = $\frac{450}{1000} = 0.45 \text{ km in 1 mint.}$
 $= 0.45 \text{ km/mint}$

\Rightarrow Train covers = 69 km in 45 mints.

For finding the ratio, time standard for both vehicles must be same.

\Rightarrow Taking the time taken by a car for both vehicles.

\Rightarrow Time taken by car = 1 mints.

\Rightarrow Now for train, divide length with time.

$$\text{avg speed} = \frac{69 \text{ km}}{45} = 1.53 \text{ km/mint}$$

So, the ratio b/w both.

~~ratio~~ $0.45 : 1.53$

d)

?

Solution.

Pentagon: It is a shape with five angles and five sides.

Therefore, the perimeter of pentagon is.

Perimeter = $5 \times x$ → (refers to the length of sides)

So $x = 15 \text{ cm}$. then.

Perimeter = $5 \times 15 = 75 \text{ cm}$.

Perimeter = 75 cm

Q no 8

?

a)

Intelligence Questions:

The type of questions which are totally related to logic and reasoning of human mind.

These questions are sometimes look like difficult but these are not actually too difficult to solve.

b)

?

Solution:-

radius of a circle is = 4 cm.
Circumference = ?

using formula of Circumference
of a circle.

$$\text{Circumference} = 2\pi r$$

So, $r = 4$ cm. putting in formula.

$$\text{Circumference} = 2\pi(4) \Rightarrow 2 \times 3.14 \times 4$$

$$\text{Circumference} = 8 \times 3.14.$$

$$\text{Circumference} = 25.12 \text{ cm.}$$

c)

?

Solution,

An Age of 5 students = 20, 22, 21, 21, 23

Therefore, it Mean.

$$\text{Mean} = \frac{\text{Sum of all units}}{\text{Divided by } \overset{\text{total}}{\text{number of units}}}$$

$$\text{Mean} = \frac{20 + 22 + 21 + 21 + 23}{5}$$

DATE: _____

DAY: _____

$$\text{Mean} = 21.4$$

Hence, $\boxed{\text{Mean} = 21.4}$ Ans.

Median of these numbers = ?

\Rightarrow Firstly, for finding median, place numbers in ascending form.

20, 21, 21, 22, 23

Therefore, $\boxed{21 \text{ is median.}}$ Ans

~~Mod~~ Mode of numbers = ?

\Rightarrow For finding mode, it is to note that which number is repeated more times.

20, 21, 21, 22, 23

\Rightarrow In this data sheet 21 is repeated twice therefore,

$\boxed{\text{Mode} = 21}$ Ans

DATE: _____

DAY: _____

Range of these numbers = ?

For finding range, the larger numbers in this data sheet must be subtracted from smaller number.

20, 21, 21, 22, 23.

\Rightarrow 20 is smaller number.

\Rightarrow 23 is larger number.

So the Range is.

$$\text{Range} = 23 - 20 = 3$$

Range = 3 Ans.

DATE: _____

DAY: _____

d)

?

Solution,

⇒ Total earned profit in year = 406,000

⇒ Tahir started with = 15,000.

⇒ Umar invested after 5 months = 30,000

⇒ Usman joined at 9th month = 45,000.

Total earned profit = 406,000

Sharing the profit first = $\frac{406,000}{3}$

= 33,833.33.

⇒ Share of Tahir in profit =

Time over