

SECTION - B

(b) Kashif required ?

Total amount required = Rs 800 .

borrowed from brother = 20% of 800 Rs .

$$= \frac{20}{100} \times 800$$

$$= \underline{\underline{160 \text{ Rs.}}}$$

Amount funded by mother = 30% of remaining .

$$\begin{aligned} \text{remaining} &= \text{total} - \text{borrowed from brother} \\ &= \text{Rs } 800 - \text{Rs } 160 \\ &= \text{Rs } 640 \end{aligned}$$

Amount funded by mother = 30% of 640

$$\begin{aligned} &= \frac{30}{100} \times 640 && \begin{array}{r} 64 \\ \times 3 \\ \hline 192 \end{array} \\ &= \underline{\underline{\text{Rs } 192}} \end{aligned}$$

Amount he need = total req - (160 Rs + Rs 192 + 200)

$$= \text{Rs } 300 - 552 \text{ Rs}$$

Amount = Rs 248
he need

(c) Three bags contain 3 red - - - - - ?

Probability of
getting red ball = $\frac{\text{No. of way of occurrence of}}{\text{an event}}$
from 3rd bag $\frac{\text{total possible outcome.}}$

$$= \frac{4}{4+6}$$

$$= \frac{4 \times 0.4}{10}$$

$$= 0.4$$

(a)

$$x + y + z = 370 \text{ f} \rightarrow \textcircled{1}$$

$$y = \frac{1}{4} z$$

$$\text{and } x : z = 3 : 5$$

\downarrow
 \textcircled{a}

$$\frac{x}{z} = \frac{3}{5}$$

$$x = \frac{3}{5} z \rightarrow \textcircled{b}$$

Putting \textcircled{a} & \textcircled{b} in $\textcircled{1}$.

$$\frac{3}{5} z + \frac{1}{4} z + z = 370$$

$$\frac{12z + 5z + z}{20} = 370$$

$$\frac{17z + z}{20} = 370$$

$$\frac{17z + 20z}{20} = 370$$

$$\frac{37z}{20} = 370$$

$$z = \frac{370 \times 20}{37}$$

$$z = 200 \text{ f}$$

using (a)

$$y = \frac{1}{4} (z)$$
$$= \frac{1}{4} (\overset{50}{200})$$

$$y = \$50$$

using (b)

$$x = \frac{3}{5} z$$

$$= \frac{3}{5} (\overset{40}{200})$$

$$x = \$120$$

(d) The traffic lights - - - - - ?

Taking L.C.M

2	24, 36, 72
2	12, 18, 36
2	6, 9, 18
3	3, 9, 9
3	1, 3, 3
	1, 1, 1

LCM = ~~2x2x2~~ Product of Common factors
and uncommon factors.

$$= 2 \times 2 \times 2 \times 3 \times 3$$

$$= 72 \text{ sec.}$$

∴ they all change simultaneously at
8 : 20 : 00 hr.

they will change again after 72 sec :

$$72 \text{ sec} = \frac{72}{60} \text{ min} = 1 \frac{12}{60} \text{ min}$$

$$72 \text{ sec} = 1 \text{ min } 12 \text{ sec}$$

So, they will change simultaneously at

$$\boxed{8 : 21 : 12 \text{ hr}}$$

Question no: 8

(a) A car runs at a speed ----- ?

Speed ^{during} first half = 40 km/h

Speed during 2nd half = 60 km/h

Average speed = ?

$$\text{Average} = \frac{\text{sum of obs.}}{\text{total no. of obs.}}$$

$$= \frac{40 \text{ km/h} + 60 \text{ km/h}}{2}$$

$$= \frac{100 \text{ km/h}}{2}$$

Average = 50 km/h
speed.

(b) if Rose ----- ?

R	0	5	E	} 10
6	8	2	1	

char is coded as

C	H	A	I	R	} ②
7	3	4	5	6	

Preach is coded as

P	R	E	A	L	H	} ③
9	6	1	4	7	3	

so.

from ROSE, S is coded as 2
from ① & ②, E is coded as 1
from ② & ③, A " " " 4
from ①, ② & ③, R " " " 6
from ② & ③, L " " " 7
from ② & ③, H " " " 3

so SEARCH will be coded as
214673

(c) If A is brother ----- ?

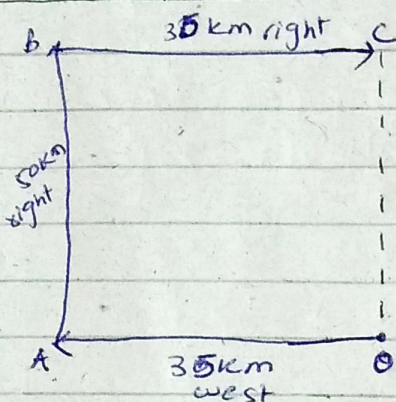
A is brother of B and B is the sister of C. Therefore A, B & C are the siblings. ~~B is a daughter of C~~
C is the father of D (male)

so,

D is the nephew of A
A is the uncle of D.

d) Kashmala travels - - - - - ?

Graphical representation of Kashmala's route



Kashmala starts from point O, and travels 35 km towards A point then takes a right and travel 50 km towards B, and ends her journey at point C after traveling 35 km.

Distance from the original position
= \overline{OC}

from the graph

$$\overline{AB} = \overline{OC}$$

\overline{AB} is given as 50 km

So,

$$\overline{OC} = 50 \text{ km}$$

PART II

(SECTION-A)

Question no: 2

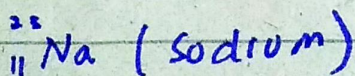
(a) What is octet - - - - - ?

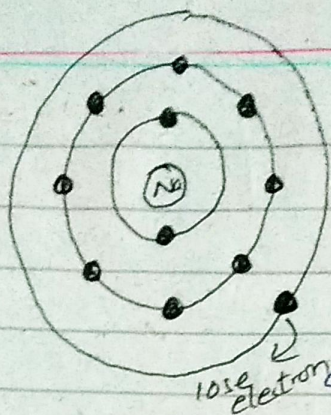
OCTET RULE:

Elements of the periodic table lose or gain ^{or share} electrons to attain the electronic configuration of the nearest noble gas to attain stability or

Loss or sharing or gaining electrons to obtain eight electrons in the valence shell is called octet rule.

Example:





Sodium has an electronic configuration $1s^2, 2s^2, 2p^6, 3s^1$ meaning only 1 electron on its

Following the octet rule, atom attain stability by having 8 electrons in its valence shell. So Sodium lose 1 electron to attain configuration of the nearest noble gas Neon ($1s^2, 2s^2, 2p^6$).

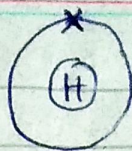
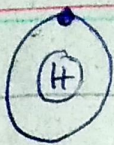
COVALENT BOND:-

"Sharing of ~~an~~ electrons between atoms to complete its octet rule is called covalent bond."

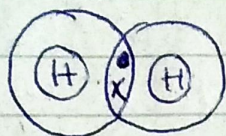
In covalent bond there is mutual sharing of electrons. Unlike ionic bond that requires complete transfer of electrons.

Examples of covalent bond:

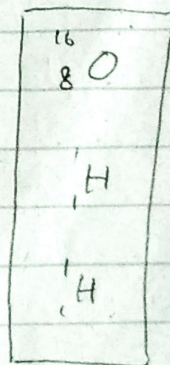
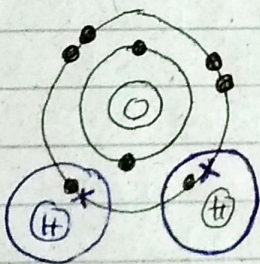
(a) H_2



Hydrogen atom requires to have 2 electrons in its valence shell. So both atoms will share their electrons to achieve stability.



b) H₂O (water).

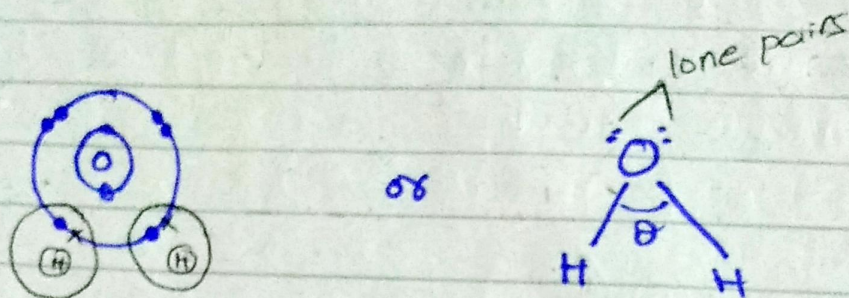


Water molecule have covalent bond.

Oxygen requires 2 more electrons and that are shared by 2 hydrogen atoms. All three atoms gain stability.

(b) Why is water molecule - - - - ?

WATER MOLECULE:



Reason of angular structure:

Electrons in an atom have same electric charge and they repel each other. The electrons exist in the form of ~~two~~ pairs. There are two lone pairs of electrons and two shared pair of electrons in ~~oxy~~ water molecule.

As the pairs repel each other. Lone pair - lone pair repulsion is greater than shared pair repulsion. This forces the shared pair away from the lone pair and pushes shared pairs relatively closer. Hence the angular structure.

Question no: 4

c) Pakistan is the 5th - - - - ?

Causes of population explosion in Pakistan:

Pakistan has become the fifth most populous country in the world. There are many factors contributing to the cause. They are discussed below.

1) Lack of awareness:

Most of the people in Pakistan are not aware of the issues that comes with the increasing population. Along with the population being threat for the country's resources it also affects mother's health. There is no concept of family planning and people usually shy away from the discussion.

2) Early marriages:

The early marriages are quite common in Pakistan. With girl being young have no awareness or understanding of the family planning. Thus having more children.

3) Multiple marriages:

Men get married to more than one women sometimes. This results in ~~more~~ having more children.

4) POVERTY:

Poor people usually have more children in hope that they will earn for the family. More the children, more the income. This mindset has contributed a lot to population explosion.

5) Lack of Education:

In rural settings, girls education is not the primary focus of the parents either due to unavailability of schools and colleges nearby, or due to lack of expenses or interest. Women get married the earliest.

MEASURES TO CONTROL POPULATION

Pakistan's population is increasing on an alarming rate and it needs to be controlled. Following steps can be adopted in order to control the population explosion.

- 1) Creating awareness among the masses about the health issues associated with having many children.
- 2) Providing education to both girls and boys, so that early marriages can be avoided.
- 3) Promoting family planning and not considering it a taboo.
- 4) Adopting a policy like China's one child policy to control the population explosion.
- 5) Women empowerment can contribute to population planning.

(d) What are Montreal -----?

MONTREAL PROTOCOL:

• Montreal protocol was designed to reduce the emission of CFC's (Chloro Fluoro Carbons) into the environment?

It has the most signatories. Almost all

the countries of the world signed the montreal protocol.

It was designed after finding out that CFC's are destroying the ozone layer in the stratosphere.

Chlorine in the CFC's react with the ozone molecule and break it.

After this protocol, CFC's were replaced by Hydro fluoro Carbons HFC's.

KOYOTO PROTOCOL :-

Designed in 1997, with the purpose to decrease the Carbon emissions.

It urged the countries to make carbon cuts into their emissions to reduce the effects of carbon in the environment as it is the biggest contributor to Climate Change and global warming.

Carbon Market:

Carbon market is the trading of carbon quota. Each country is

given a certain limit to its carbon emissions called carbon quota.

The countries who have reached the level of their allocated quota tends to buy it from the countries that have not used all of the allocated limit.

Carbon market makes it impossible to reduce carbon emissions.

(a) What is solid - - - - - ?

SOLID WASTE MANAGEMENT:

"Solid waste management is the planned and functional management of the solid waste from the point of its collection, treatment to disposal."