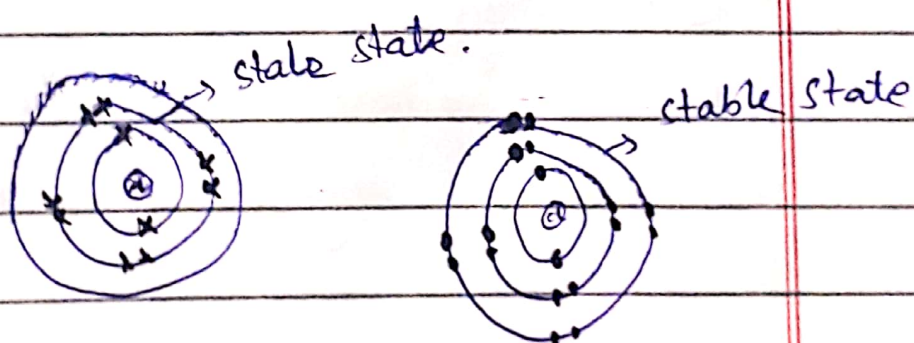
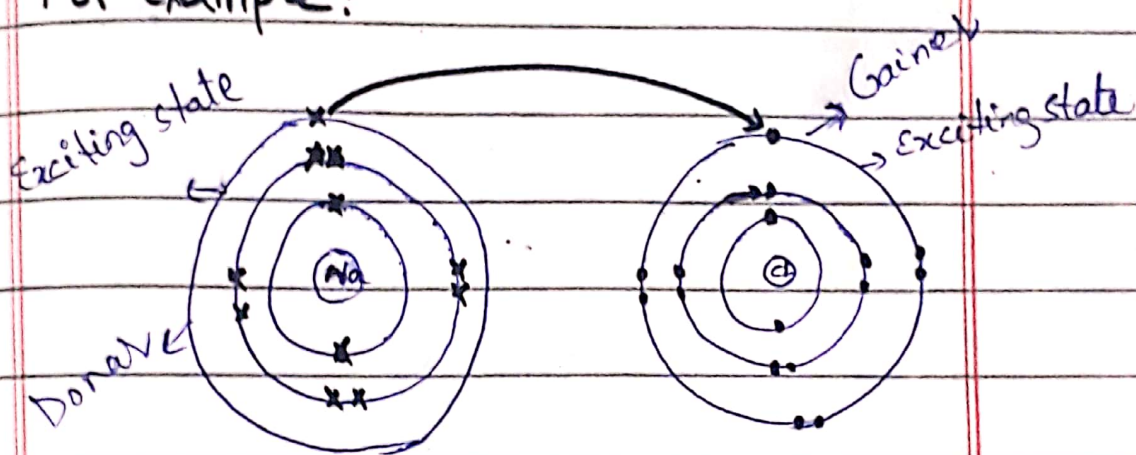


Q No 3:- (a)

Atoms form chemical bond to make their position stable. In chemical bond either they gain or loss an electron. In both cases, the atoms shift from exciting state to stable state.

For example:



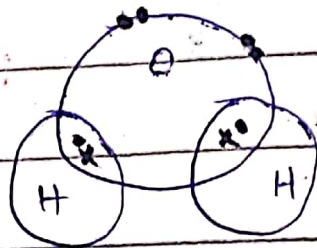
Here Sodium has an electron extra and the outermost shell of chlorine is not complete that has to (8) electrons. It gains an electron from Sodium to

by forming ionic bond with it and make itself stable.

Covalent bond:

A type of chemical bond in which atoms mutually share a pair of electrons to complete their outer most shells.

→ Water formula is H_2O



The two hydrogen atoms share a pair of electrons to fill the outer most shell of oxygen and make water molecule.

Q No 3 (b)

Doping: Doping is a technique in which number of electrons are increased to make an atom more conductive. Such as semiconductor electric conductivity is increased with this technique.

Types of ceramics

① **Made of clay:**

Ceramics which are made by clay and through heating process they are shaped such as potteries, dishes etc.

② **Silica:** Ceramics which are used in electronic devices are made of silica. Such as switches etc.

QNo3:- (c):

Global warming:- It is long-term heating of earth's surface through pollution by the industries and other human activities.

Merits of Global Warming:

- 1) It makes weather bearable in the temperate zones where temperature is very low.
- 2) It reduces mortality rate in the cold regions.
- 3) It increases productivity of winter lands, where farming is difficult due to extreme cold winter.
- 4) It decreases the number of frozen zones on the earth and make these zones liveable.

e.g:- Antarctica, Siberia.

Demerits of global warming.

- ① It increases temperature of ^{the} earth which cause heat-waves which

Date: _____

- badly effect the life of people .
- ② Increase floods due to melting of glaciers
 - ③ Drought situations may occur due to high fresh floods
 - 4) Loss of species and wildforests
 - 5) More health risk due to extreme heat waves and pollution
 - 6) Floods cause poverty and displacement.

Q Nos (d) :-

Polio : It is type of disease for which a child's muscles stops working and cannot move its body parts easily.

Causes of polio :

It is caused due to contaminated water and food and unhygienic environment. It is also spread from the faeces of infected person.

Date

Symptoms of polio:

High fever, headache, vomiting and nausea. The child may face stiffness of the neck and pain in the limbs.

Challenges to eradicate polio from Pakistan:

The utmost challenge is the misconception about the vaccine of polio especially in Balochistan and KP. The people of these areas do not accept the treatment of vaccine.

The other challenge is, to provide vaccine in the far flung areas of villages where there is also a security issue.

Moreover, people are illiterate they do not know the complications of this disease and the benefits of vaccination. They still believe

Date: _____

in unauthentic divine things. They believe in clergy and churches. Last but not the least, Pakistan face economic issues - It cannot provide vaccines to each and every child and eradicate it completely.

Q No 4:- (a)

Bile: It is a fluid which is made and released by the liver. It is stored in the gallbladder.

Bile helps in the digestion of food. It carries wastes ~~of~~ from body and transport it to the intestine to discharge them from the body.

Bile also break down fats during digestion and also helps in fat-soluble vitamins.

Bile break down fatty acids and ~~so~~ transfer them to digestive

tract from where the wastes get discharge.

Bile discharge the excess cholesterol which are harmful for^{the} health. It maintains the diet of health automatically. It keeps acidic pH level balance by providing alkaline fluid.

Q No 4: (b)

Kidney is also part of the excretory system which is responsible for excretion of waste materials through urine.

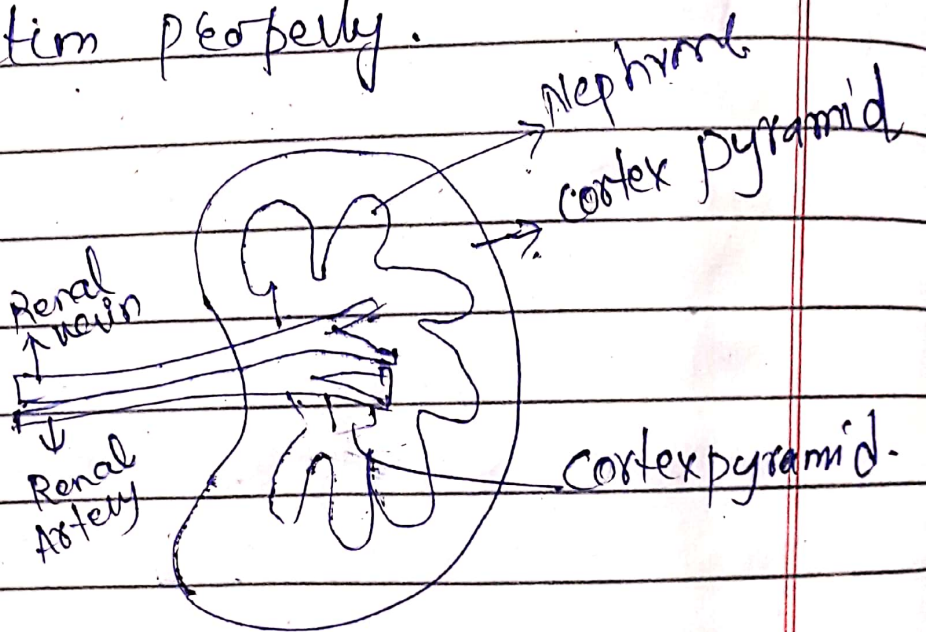
Kidney filters the blood and discharge the waste of blood either through the large intestine and urine.

Nephrons in the kidney does the work of secretion and reabsorption. It selectively

Date: _____

absorbed the nutrients, acids which are used by the body, and builds hormones in the body.

Nephron filters the blood, kidney reabsorbed the acids selectively and discharge the acids which are harmful for body. In this way it regulates the PH level of body to function properly.



Q No 4 :- (d)

1) Appendicitis :

Appendicitis happens inside the appendix when it gets blocked.

It may also happen due to infections by viruses, bacteria and parasites, in the digestive tract.

One of the reasons of appendix pain is the blockage of tube between large intestine and appendix.

(2) Anaemia

Anaemia is shortage of blood in the body. It occurs due to Malaria and fever for longer time in which the blood in the body reduced. It also happens due to deficiency of Vitamin (A).

Most of the hepatitis patients face this due to ineffectiveness of liver

Date: _____

(3) **Spleen:** Spleen is located ^{on} ~~at~~ the upper left side of the abdomen under the ribs and above the stomach.

It filters the blood and damage old red blood cells.

It maintains quality of blood in the body.

(4) **Myopia:** Nearsightedness in which one cannot see the ~~close~~ far objects clearly, but can see the close objects clearly. It happens due to extra use of mobiles and laptops. People cannot see far objects clearly due to bending of light in the eyes.

(5) **Isotones:**

Atoms that have same neutron number but different proton

number. It is the opposite of isotopes.

Q No 7: (b)

Average age of three boys = 15 years.

Ratio of their ages = 3 : 5 : 7

youngest boy's ~~age~~ age = ?

$$3x + 5x + 7x = 15$$

$$\frac{15x}{3} = 15$$

$$15x = 15 \times 3$$

$$15x = 45$$

$$x = \frac{45}{15}$$

$$\boxed{x = 3}$$

The youngest boy's age = $3x$.

$$3 \times 3 = 9 \text{ years.}$$

Date: _____

Q No 7: (c)

(i) 8, 19, 52, 151, 447, ...

$\underbrace{\quad}_{11}$ $\underbrace{\quad}_{33}$ $\underbrace{\quad}_{99}$ $\underbrace{\quad}_{109}$

The difference between the numbers in series is divisible by 11 except "447" in which the difference is "109" which is not divisible by "11". So, the wrong number is 447.

(ii) 11, 13, ~~17~~, 19, 23, ...

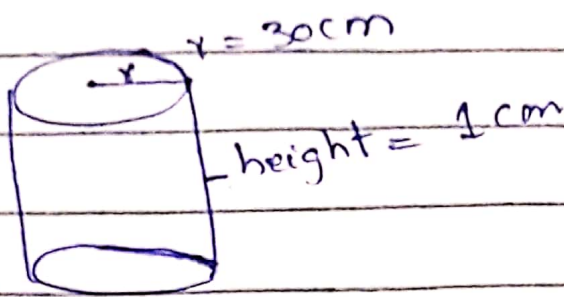
In the series the number are prime number which are not divisible by other numbers so the number in the series next to "23" will be "29" and "29" is also a prime number.

Q No 7: (a)

Volume of cylinder?

Date _____

$$V = \pi r^2 h$$

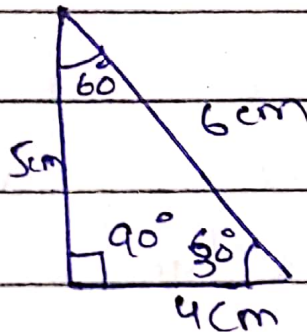


$$V = 3.14 \times (30)^2 \times (1) \text{ cm}$$

$$V = 3.14 \times 900 \text{ cm}$$

$$V = 2.82600 \text{ cm} \text{ Ans.}$$

Q No 7: (d)



According to the length of the sides given in Questions. The triangle is right angle triangle in which angles are 90° , 30° , and 60° .

8
-12
68

Date: _____

QNO 6:- (b)

Original price of shoes = 80

Discount on price = $80 \times 15\%$

Sales tax = 10%

$$80 \times 15\% = 12$$

$$80 - 12 = 68$$

$$68 \times 10\% = 6.80$$

$$68 - 6.80 = 61.2$$

The final price will be

61.2 \$

80
15
400
800
1200
68
10
680
680
6.80

QNo 6: (c):-

Total distance covered = 42 km

Average distance per hour = 36 km/hr

$$42 - 36 = 6 \text{ km}$$

On average 1 km = 1 minutes

So, it takes 1 hour and 6 minutes.

If starts at 4pm then will reach at 5:06pm.

42
36
10
6

* "Solid Waste Management System"

The activities associated with the management of municipal solid waste can be grouped:

(a) waste generation:

→ Wastes which can neither be reused nor recycled. These are unvalued wastes all thrown away.

→ Valued wastes are gathered for disposal.

(b) Handling, sorting, storing and processing

Collect wastes, sort them according to their use, can store few, Rest wastes are sent for processing.

Date: _____

* Most favored options

Reduce Lowering the amount of waste produced.

Reuse Using materials Repeatedly

Recycle Using materials to make new products

Recovery Recover energy from waste
 → Methan for electricity

landfill Safe disposal of waste to landfill

* Least favoured option

Structure of Sanitary landfill

① **cells**: Construct cells in the selected areas to dispose wastes.

② **Bottom liner**:

Bottom liners are constructed in the cells by using durable puncture-resistant synthetic plastic with combination of ^{compacted} clay

soils. It will not damage the ground water and air.

(3) Leachate collection system:

leachate is a highly contaminated liquid. It is generated from decomposition of garbage. It destroys ground water through percolation process.

→ To stop percolation of water and secure ground water, the landfill is constructed a sloped to a low point, called a "Sump".

The leachate are trapped inside the landfill are collected, removed from the landfill and treated therefrom.

(4) Methane collection system:

Inside the landfill, Methane is produced due to decomposition of trash by the bacteria in the absence oxygen. Methane can burn and explode which destroys the area and increases air pollution.

→ To reduce this, pipe are embedded

in the landfill to extract/collect methane gas and use them to generate electricity at a small power plant.

(5) **Cover (or cap)**: A cap is required to cover daily wastes to reduce pollution and health hazards. For this, covering is performed to control ~~of~~ odors of trash. It is permanently covered with a combination of a layer of polyethylene plastic.

Industry landfill: Industry landfill is like an open dumping system, which Pakistan is currently using ~~also~~. It is very hazardous for health and environment.