Section - II

Q No 6

(9)

Given Data:

Three candidate contested elections

Reciered votes = 15000 , 10000 , 8000

What percentage of total votes is the winning candidate = x.

Solution

let's us find total votes.

We can find the total votes

by summing the votes of all three

candidates :-

Total votes = 15000 + 10000 + 8000

Total votes = 33,000

Now, the winning candidate

has received 15,000 votes.

The percentage of winning candidate = $\dfrac{15000}{33,000} \times 100$

By simplying = $\dfrac{\overset{500}{\cancel{15000}}}{\underset{11}{\cancel{330}}}$

The %-age of winning candidate = $\dfrac{500}{11}$

The %-age of winning candidate = 45.45%

Thus, the percentages of winning candidate total votes is

$\boxed{45.45\%}$

(b)

Given Data

Ratio of angles : 3 : 4 : 5

Find each angle : ?

Solution

let the angles be : A : B : C

$$A = 3 \qquad B = 4 \qquad C = 5$$

We know the sum of triangle

is always $180°$

Now

A's angle $= 3x$

B's angle $= 4x$

C's angle $= 5x$.

The sum of angles.

$$3x + 4x + 5x = 180°$$

$$12x = 180°$$

$$x = \frac{180}{12} \qquad 15$$

$$x = 15$$

So, put in the values.

A's angle $= 3(15) = \boxed{45°}$

B's angle $= 4(15) = \boxed{60°}$

C's angle $= 5(15) = \boxed{75°}$

Therefore, the three angles will

be $\boxed{45°, 60° \text{ and } 75°}$

Q6 N

(C)

Given Data.

Each group 4 boys and 6 girls of girls are 102, what will be Boys = $\underline{x}$

Solution   let Boys number = x

Boys : Girls:

4 : 6

x : 102

Direct proportion

so

$$\frac{x}{4} = \frac{102}{6}$$

taking 4 to other side

$$x = \frac{\cancel{102}^{34}}{\cancel{6}_{3}} \times \cancel{4}^{2}$$

$$\boxed{x = 68}$$

Therefore, $\boxed{68 \text{ boys}}$ will required if the girls are 102.

Q6

(D)

Given Data :

Ratio of present ages = A & B = 6:7

After 5 years this ratio become : 7:8

Find present ages of A & B.

Sol:

let the present of A & B = x.

So, A = $6x$ B = $7x$

$$\frac{6x+5}{7x+5} = \frac{7}{8}$$

By cross multiply, we get

$$8(6x+5) = 7(7x+5)$$

$$48x + 40 = 49x + 35$$

Now, taking similar values to one side

$$49x - 48x = 40 - 35$$

$$x = 5$$

Putting the value of x in ratio

to find present age.

present ages

$$A = 6x = 6(5) = \boxed{30}$$

$$B = 7x = 7(5) = \boxed{35}$$

So, the present ages

of A & B are $\boxed{30 \text{ and } 35}$

Q No 8

(9)

Given Data:

The sum of three consecutive
Number = 273
What are the three odd number

Sol.

let the numbers be

The First = x

The Second = $x+2$

The Third = $x+4$

So their sum is

$$x + x+2 + x+4 = 273$$

$$3x + 6 = 273$$

Taking 6x and 3 to other side

$$x = \frac{273}{3} - 6$$

$$x = \frac{267}{3}$$

$$\boxed{x = 89}$$

The second^{odd} No = $x+2 = 89+2 = \boxed{91}$

The third^{odd} No = $x+4 = 89+4 = \boxed{93}$

Therefore, the three odd

numbers are $\boxed{89, 91 \text{ and } 93}$

(b) Series

(i)   4, 16, 36, 64, ?, 144

The series multiple of $2^2, 4^2, 6^2, 8^2, 10^2, 12^2$

So the missing number is 100

4, 16, 36, 64, $\boxed{100}$, 144 .

(2^2) $(4)^2$ $(6)^2$ $(8)^2$ $(10)^2$ $(12)^2$

(ii)   30, 29, 27, ?, 20, 15

The series reduces with rate, 1, 2, 3, 4, 5

So,

$$30, \overset{-1}{\frown} 29, \overset{-2}{\frown} 27, \overset{-3}{\frown} 24, \overset{-4}{\frown} 20, \overset{-5}{\frown} 15$$

(iii) $1, \underset{+6}{\frown} 7, \underset{+8}{\frown} 15, \underset{+10}{\frown} 25, \underset{+12}{\frown} ?, \underset{+14}{\frown} 51$

1, 7, 15, 25, 37, 51

(iv) $0, \underset{+2}{\frown} 2, \underset{+4}{\frown} 6, \underset{+6}{\frown} 12, \underset{+8}{\frown} 20, \underset{+10}{\frown} 30, \underset{+12}{\frown} ?.$

0, 2, 6, 12, 20, 30, $\boxed{42}$

(C)   Correct word

(i)   **T H R S I**

Correct word = Shirt

(ii)   **G N DRE A.**

Correct word = Gender

(iii) **S C H A MOT:**

Correct word = Stomach

(iv)   **ONLN DO**

Correct word = London

(v)   **H I O DAly:**

Correct word = Holiday

Q9

(d)

Given Data

Sara's Mother 6 time older then
Sara

Her Brother is twice

In three years' time, sum of eyes
will be [72]

find their present ages : of Ali, Sara
& Mother.

Sol.

let   Sara's age be = x

Her Mother age = $6x$

Her Brother age = $2x$.

Now, in three years their
sum will be = 72

$$(x+3) + (6x+3) + (2x+3) = 72$$

$$9x + 9 = 72$$

taking both nines to other sides

$$x = \frac{72-9}{9}$$

$$x = \frac{63}{9}$$

$$\boxed{x = 7} \quad \rightarrow \text{ Present age of Sara}$$

Mother's age = $6x$ = $6(7)$ = $\boxed{42}$ Years

Brother's age = $2x$ = $2(7)$ = $\boxed{14}$ years.

Therefore, their present ages

are   7,   14,   42
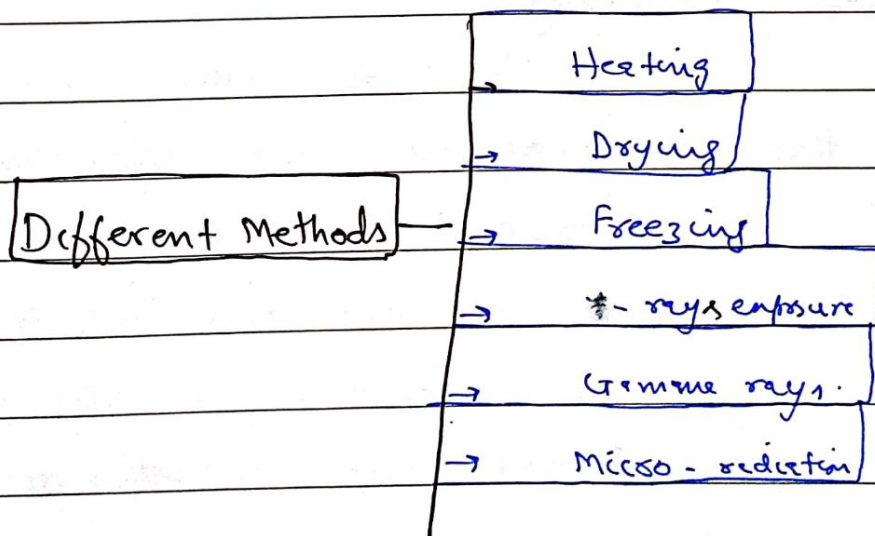   Sara   Ali   Mother

Part II
Section I

Q 5

(9)

Food Preservation:

Food preservation is the process of preventing food from spoilage. The food gets spoiled due to moisture, heat, bacterial or viral attack. The methods of food preservation helps to store the food for a longer duration without getting spoiled. There are different Methods of Food preservation. Some of them are as follow.

(i) Different Methods of Food Preservation:

Different Methods —
- → Heating
- → Drying
- → Freezing
- → rays exposure
- → Gamma rays.
- → Micro - radiation

(a) Heating:

Heating is the oldest method of food preservation. The Micro-organisms grow between 30℃ to 25℃. By heating food up to 80℃ to 90℃, all micro-organisms are killed. This can be done in boiling machines.

(b) Drying:

This method is very common in cold areas such as Gilgit Baltistan etc. The key is to dry food of moisture because moisture is the fertile ground for micro-organisms to grow.

(c) Freezing:

It is often seen that micro-organism are either killed or their growth is reduced when the temperature is very low. Thus, freezing food in refrigerator is also one of the good ways to preserve food.

(4)   Micro-waves radiation:

Micro-waves radiations kill the bacteria or other organism on the spot and help in the preservation of food.

(5)   Gamma rays:

Cobalt 60 is used to preserve food because it kills bacteria or germs in the food and helps in its the storage for a long-time.

(b)

(1) Milky way

The milky way is one of the galaxies in the universe. It is often called our galaxy because our solar system is the part of it. Some of its key features are given below.

(a) Characteristics of Milky way:

(i) It is a spherical or elliptical in shape.

(ii) It is comprised of more 300 bn stars

(iii) The sun is not at the center of milky way and revolve around it in 205 year

(iv) Its arms called galactic arms and occupies position called galactic space.

(2) Dark Mark.

According to scientists the physical matter is 4 percent of the universe. The remaining volume

is occupied by Dark energy and Dark matter which is 91 percent and 75 percent respectively. The scientists say we cannot know about it because it does not come in direct interaction with the universe, but it effects an gravitional forces are clear.

How Dark matter is related to Galaxies:

According to astrologists and scientist, dark matter was the meeting point of all matter in the universe. It attracts all particles and then comes the galaxies as we know them today.

(3) Different Parts of Galaxies:

① Stars:

Stars are the key parts of galaxies.

② Metercod & Astercods:

These are the parts of every galaxy.

③ Dark Matter & Energy.

④ Inter-cellular of stars.

(C)

Eclipses:

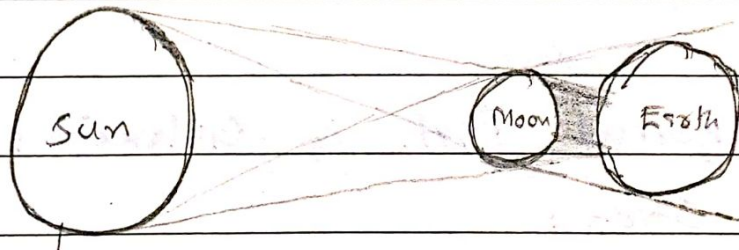Eclipses refers to obscuring of one heavenly body by another. There are two types of eclipse: one is solar and other is lunar.

(i) Solar Eclipse:

When the moon comes between the Earth and the Sun, it obscure the sun or cast shadow on the Sun and causes solar eclipse.
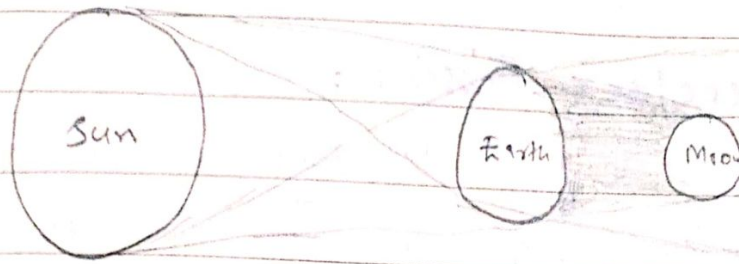
Graph

(ii) Lunar Eclipse

When the Earth comes in between the Moon and the Sun, it cause lunar eclipse by casting large shadow on the Moon.

Graph

Difference Between lunar and solar eclipse::

(i) Definition:

Lunar eclipse happens when the earth cast shadow on the Moon.

Solar eclipse occurs when the Moon comes in between the earth and the Sun.

(ii) Duration:

The lunar eclipses lasts 3 to 5 minutes and sometimes longer.

The Solar eclipses occurs for a longer durations

(iii) Occurance:

The Lunar eclipse occurs when there is full moon and it is very frequent

The solar eclipses are not very frequents.

(q)

① Nuclear Fission :

Nuclear fission refers to bursting of elements due to unprecedented energy. The conversion of energy in solar or the sun from He to H is based on the phenomenon of nuclear fission.

② Nuclear fusion :

Nuclear fusion is the phenomenon of fusing of different particules by giving them huge amount of energy. The example of nuclear fusion is the Atomic Bomb.

(3) Ionic Bond :

Ionic bond refers to the complete transfer of one electron from one element to another. It mostly occurs in electronic negative elements
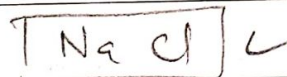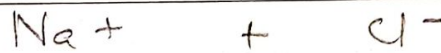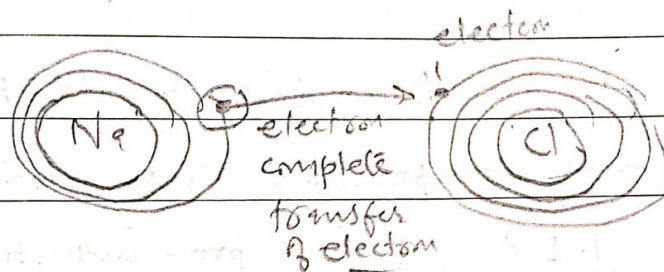
Ionic Bond in Table Salt:

Table salt is chemically written as $NaCl$. In this bond, Na loses its electrons and become positively charged and Cl element get an electron and become Negative charged.

$$Na+ \quad + \quad Cl^-$$

$$\boxed{Na\ Cl} \ \llcorner$$

Q 3

(a)

Globel warming:

Global warming refers to the gradual rise in the temperature of the earth. It happens because of heating trapping gases known as Green House Gases such as Methane, CO_2 and CFcs etc. According to NASA, the earth temperature has risen upto 1.1 c from pre-industrial era. In the current scenario, the countries are facing several hurdles in the way of tackling the course of global warming.

(2) **Hurdles in Developing countries to tackle the impacts of global warming in the light of CoP28.**

CoP28 was held in UAE this year. It was the first stock rish meeting and it highlights several hurdles in the way of developing countries - Some of them

are as follows.

(i) Lack of financial resources:

The developing countries do not have financial resources to tackle global warming. The loss and Damage Fund is not adequate to address it because only $750 million are allocated. The UN report says that developing countries need $265 to $365 bn annually.

(ii) Lack of resilence and adophibility

Another challenge is lack of resilient infrastructure to weather the catastrophic natural event.

(iii) Lack of infrastructure for renewable energy:

They do not have enough money to install infrastructure for renewable energy.

(iv) Inadequate to transition away from fossil fuels:

Their economies are not well-equipped to do transition away from fossil fuels.

(d)

RAM and ROM:

RAM and ROM are the units of memory in the computer. They play key role in the proken of the computer. Their difference is given below-

(1) Distinguish Between RAM and ROM:

RAM and ROM are different from each other in several ways. Some of them are as follows.

(i) Definition:

RAM refers to randomly accen Memory. It means computer can accen any address on computer randomly.

ROM refers to Read-only Memory. The computer cannot accen any part any time.

(ii) Volatile vs Non volatile

RAM is a volatile memory need consist supply of power.

ROM is non - volatile memory; it does not need power.

(iii) High speed vs low speed:

RAM has a very high speed.

ROM is relatively slow.

(iv) High vs low storage:

RAM can storage huge data.

ROM cannot store huge data.

(V) Examples.

RAM = Static RAM
　　　　Dynamic RAM.

ROM = PROM
　　　　EPROM.

(b)

Balanced diet:

Balanced diet refers to proper amount of minerals and nutrient in the food. It is essential for proper growth of body and helps in the prevention of disease and smooth multiple functions in the body.

(i) Several constituents of Balanced diet:

There are several constituent of balanced diet some of them are given:

① Carbohydrates:

There are essential part of it and provides 4 calories energy.

② Proteins:

It is also a part.

of balanced diet and called as body builders.

(iv) Vitamins.

These are also essential for a balanced diet. It reduces deficiency diseases.

(v) Fatty acids:

They provide a huge amount of energy and provide much needed energy.

(C)

Artificial Intelligence & Machine learning:

Artificial intelligence is a emerging branch. It refers to making intelligence machine. John Maccharthy define it as a soft or machine based on human thinking patterns. Moreover, the Machine learning is the sub part of AI. In this machines are trend to predict pattern based on their learning or stored data.

Machine learning evolution

There are several examples to prov.

① The chess game machine learning best the great mastes (GO).

② The self-driving cars are based on machine learning

③ The Chat GPT is also based on Machine learning