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GSA (Part II)

(SECTION - A)

General Instructions

Q.No: 2

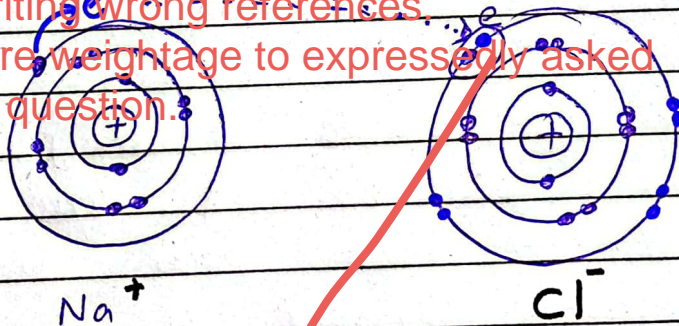
21

1. Give numbering to headings
2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.
3. Do not use table for comparison and contrast questions.

Octet rule:

4. Draw figures/diagram/flowchart where needed.
5. Start new question from fresh page
6. Write unit of the answer in ability section.
7. Explain mathematical steps and the reasoning for better score.
8. Change colour scheme for references to give them more visibility.
9. Manage time well.
10. Wide page borders are discouraged. Should be reasonable.

11. Avoid writing wrong references.
12. Give more weightage to expressly asked part/s of the question.

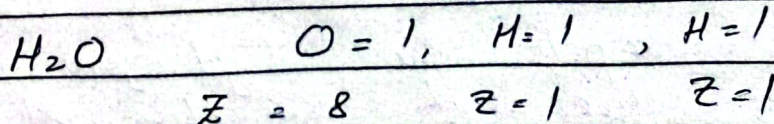


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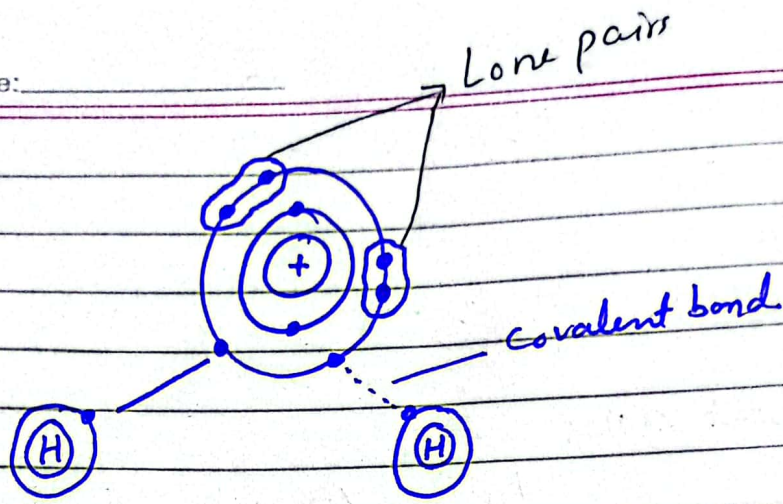
Covalent bond:

It is a bond that is formed by mutual sharing of electron between the atoms. This is important for stability between the atoms.

For example

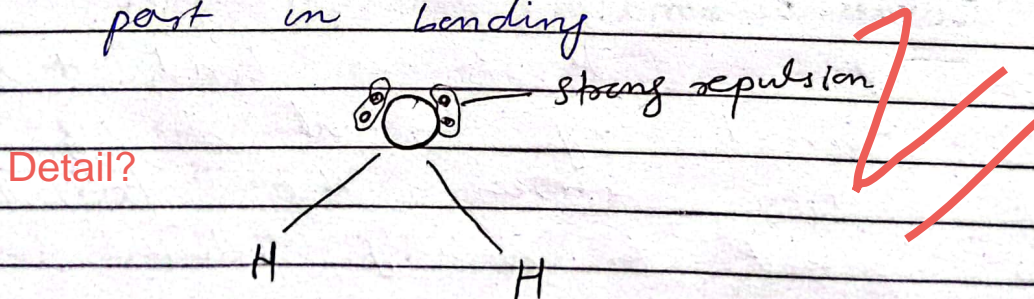


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In the above water structure two covalent bonds are formed by mutual sharing of electrons between one electron of hydrogen and oxygen and another electron from oxygen with hydrogen. This mutual sharing has made the electron atom more stable.

b. Water molecule is angular in structure because of lone pair in it. A lone pair is a pair of electron present in the outermost shell which doesn't take part in bonding.



This formation of lone pair strongly repels the hydrogen molecule which give it angular shape.

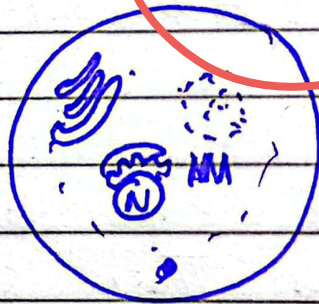
d. Cell structure.

Cell:-

It is derived from the word "cellula" which means small room.

Cell is a microscopic structure and it is present in living things like plants, animals/humans and microorganisms.

It is the basic and structural and functional unit of life. It consists of multiple cellular organelles like cell wall, plasma membrane, cytoplasm, Endoplasmic reticulum, Ribosomes, Golgi-complex, lysosomes, centriole, Mitochondria, plastids and nucleus.



Cell

1. Plasma membrane:

It is the outermost layer in animal cell and it is located after cell wall in plant cell.

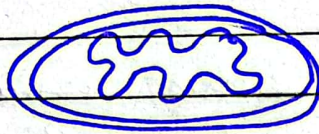
It is made up of protein and fats.

It is a selectively permeable membrane

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It whose work is to allow those material which are needed by cell. Its main function is to support, protect the cell from other harmful things. It act as a passage or path for nutrients and waste to pass.

2. **Mitochondria:** (Power house of the cell.)



It is a double membranous organelle which is self-replicating. Its numbers vary from organisms to organisms cells. The process of cellular respiration takes place at mitochondria which result in formation of Adenosine triphosphate (ATP)

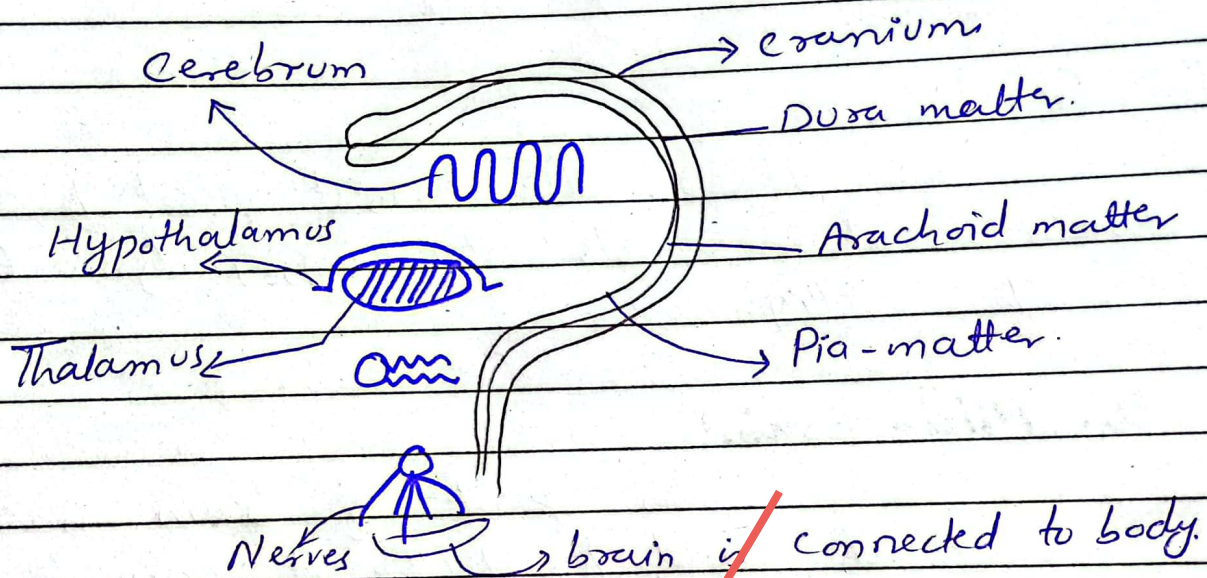
3. **Lyso-some:**

These are known as splitting bodies. They are released by Golgi-complex. Their main function involves the removal of dead cells from body.

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C. Human brain

The human brain act as the main switch of the body. It recieves information from whole body and instruct the body to response in a certain way.



The human brain consist of three parts mainly Fore-brain, mid-brain and Hind brain.

1- Fore brain:

It is the frontal part of brain it is further divided into three parts.

(i) **Thalamus** :- It collect and transfer the information to the lymptic system.

(ii) **Limbic system:**

It is further divided into 3 parts.

(a) **Hypothalamus:** This part of brain perform

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the function of controlling hunger, thirst and temperature.

b. Amygdala:

This is called the emotional part of brain. It controls happiness, anger

c. Hippocampus:

It stores the information for short period of time.

(iii) Cerebrum:

It is the largest part of the brain. It controls thinking, judgment and intelligence.

2. Mid-brain:

This part of brain is present at mid of skull. It connects fore brain and hind brain. It controls the reflex movement of eyes.

3. Hind brain:

It is the last part of brain. It consist of Medulla-oblongata, pons and cerebellum.

a. Medulla Oblongata:

It controls heart beat, blood pressure and breathing.

b. Pons:

It controls sleep cycle.

c. Cerebellum:

It controls and manages

the body balance, memory storage, and coordination.

QNO: 3.

(a) Solid waste Management:

It is the supervised handling of waste from the generation points through the recovery process and upto the disposal process. If this is a supervised process it involves institutions who collect data on routine base and plan for dumping that material.

National Strategy of Pakistan:

Pakistan produces major amount of waste every year and employs mainly three ways to ~~measure~~ dispose solid waste. These include; land fill, size reduction and screening. The 60% of daily waste is collected by municipal authorities.

Methods to improve situation of SWM in Pakistan:

There are many ways through which Pakistan can improve its situation

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of solid waste management.

1 Disposal of waste:

The disposition of waste can be done through these ways.

(a) open dumping of waste in away from residential areas.

(b) Incineration: It is the combustion or burning of waste using incineration technique.

(c) Composting: It is the controlled biological decomposition of waste. It require controlled environment.

(d) Land filling: It is the burning of waste which then filled in the land.

b. GIS :-

It is a computer system for presenting and storing the information in the form of maps.

Components:

It require a satellite where sensors should be attached. A computer system is required to store information in the form of image.

C.

Causes of population:

There are many causes of population explosion in Pakistan.

1. Female education Deficit:

There is a lack of female education in Pakistan. The culture of some areas do not allow women to study. This leads to less awareness among female population of Pakistan about the negative impacts of population.

2. Unemployment:

It is a major reason of population in Pakistan. The unemployed population in depression focus more on family growth so that their child can earn for them. The concept of more children leads to more income.

3. Disasters and Pandemics:

The recent covid-19 increased the population growth of the country. After the current census the population of country has reached to 241 million making the country fifth most populous country of the

world.

Measures to Control Population.

① Introduction of Child Policy:

The government can introduce the policy of 2 children only. This policy has been implemented by our neighbor where we saw a huge reduction in the number of population.

2. Awareness Campaigns:

The best way to control population is to give awareness to the youth from the starting point. These campaigns can be launched in schools, parks and on media platforms. Even public transport like metro and trains can be used for advertising.

3. Inclusion of Female in Job market:

The females should be included in the job market that led them to focus on their work, progress instead of bearing child. The western countries have done this and reduced the population to a larger extent.

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d.

Kyoto protocol:

It is an international treaty signed in Japan in 1997. Its main focus was to reduce the global warming through controlling emission of green house gases.

Montreal Protocol:

It is the same like Kyoto protocol. Its mission was to control global warming in the world. It was signed in 1997.

Carbon market:

It is a market for trading carbon certificates. These carbon certificates are sold and purchased for the prevention of green house gases. like, CH_4 , CO_2 , CO , NO_x etc.

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(Section - B)

QNo: 8:

(a)

Ans:

Speed of car during 1st half of Journey = 40 km/hrs

Speed " " 2nd half of Journey = 60 km/hrs

Average speed = ?

~~Average = $\frac{\text{Sum of observation}}{\text{Total No. of observation}}$~~

$$\begin{aligned} \text{Average} &= \frac{V_1 + V_2}{2} \\ &= \frac{40 + 60}{2} \\ &= \frac{100}{2} \end{aligned}$$

Average = 50 km/hr

(b)

Rose = 6821

CHAIR = 73456.

peach = 961473.

Search = ?

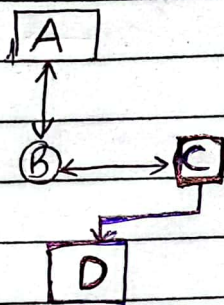
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In the above code ~~the~~ Alphabets are represented as numbers.
As the code for search will be.

'2 1 4 6 7 3' → Ans

Explain the reasoning in detail.

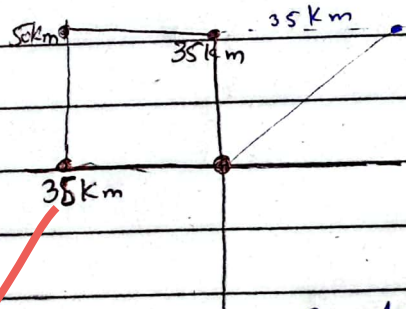
(C)



A is brother of B
B is sister of C
C is father of D.
Relation of D with A = ?

D and A are cousins.

(d)



$$(\text{Hyp})^2 = (\text{Base})^2 + (\text{Perp})^2$$

$$(\text{Hyp})^2 = (35)^2 + (50)^2$$

$$(\text{Hyp})^2 = 1225 + 2500$$

$$(\text{Hyp})^2 = 3725$$

taking $\sqrt{\quad}$ on both sides.

$$\sqrt{(\text{Hyp})^2} = \sqrt{3725}$$

$$\text{Hyp} = \boxed{61.03} \text{ Ans.}$$

Roughly
$$\begin{array}{r} 6 \overline{) 3725} \\ \underline{36} \\ 125 \\ \underline{121} \\ 4 \end{array}$$

Q:6

(b)

Sol

Kashif required 800 Rs. to pay his fees.

→ He borrowed 20% from his brother.

$$= \frac{20}{100} \times 800 = 160 \rightarrow \textcircled{1}$$

→ 30% amount was funded by his mother = $\frac{30}{100} \times 800 = 240 \rightarrow \textcircled{2}$.

→ ~~Rs~~ In his bank he had = 200 Rs $\rightarrow \textcircled{3}$.

Adding $\textcircled{1}$, $\textcircled{2}$ and $\textcircled{3}$ to find the remaining amount.

$$= 160 + 240 + 200 = 600$$

Kashif needs 200 rupees more to submit his fees.

~~_____~~

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(c) sol

Three bags contain 3 red, 7 black,
8 red and 2 black, & 4 red 6 black.

Find the probability that red ball is
drawn from 3rd bag.

$$4 \times 6 = \boxed{24} \text{ probability}$$

(a)

Total amount = \$370

Dividing in 3 parts: $\frac{1233}{3} = 123$ each part.

second part as $\frac{1}{4}$ th of 3rd part.

$$SO = \frac{123}{4} \times \frac{1}{4}$$

$\frac{1}{4}$ th of 3rd is 30.75.

Ratio b/w first and 3rd part is 3:5.

~~Ratio of~~

$$\text{Share of 1st part } \frac{123}{8} \times 123 = \boxed{46.125}$$

$$\text{2nd part} = \frac{5}{8} \times 123 = \boxed{46.125}$$