

Very good  
Enough length  
Enough headings  
Fine diagrams  
But  
Attempt 4 questions  
Work on math portion

## Section - 1

### "Q. No. 2"

"a"

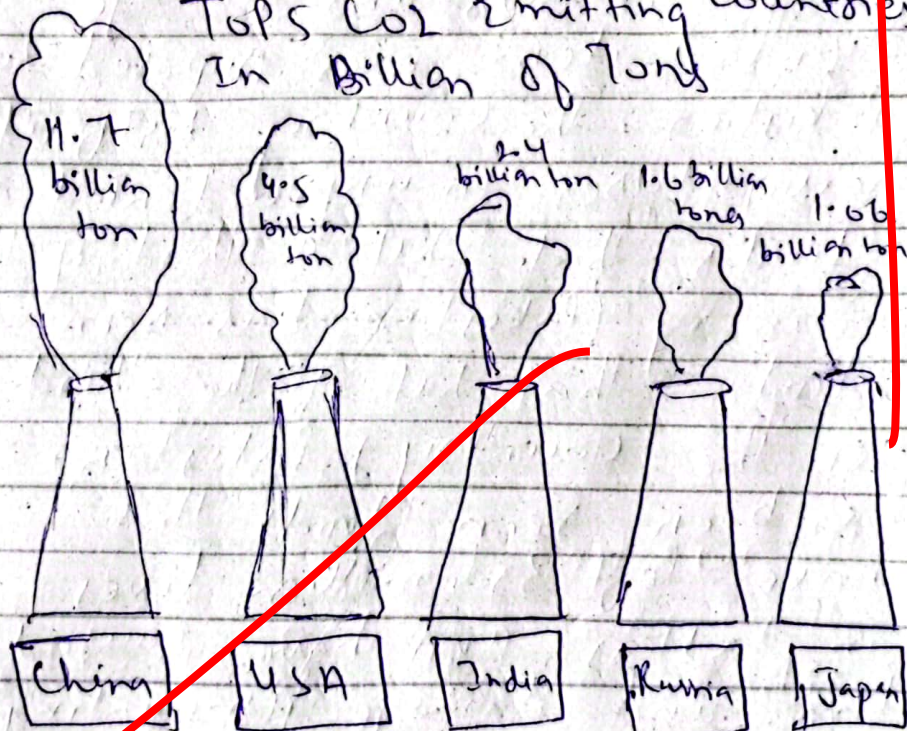
Pakistan suffered a loss of \$40 bn due to heavy floods of 2022. The loss and damage agenda item was proposed by Pakistan. The country suffered heavy losses in unprecedented floods that hit a third of the country. Pakistan has seen floods that hit a third of the country, Pakistan, has seen floods that have left 33 million lives in tatters and have caused loss and damage amounting to 10% of the GDP. Pakistan has contributed only 0.28% of the CO<sub>2</sub> emission but is among the biggest victims of climate change. The US, Europe, India



## Headings?

China, and Japan; the world's biggest polluters, must accept responsibility for the catastrophic flood in Pakistan and climate disasters elsewhere. A direct link of the disasters in Pakistan to climate change has been confirmed by a team of 26 scientists affiliated with World Weather Attribution.

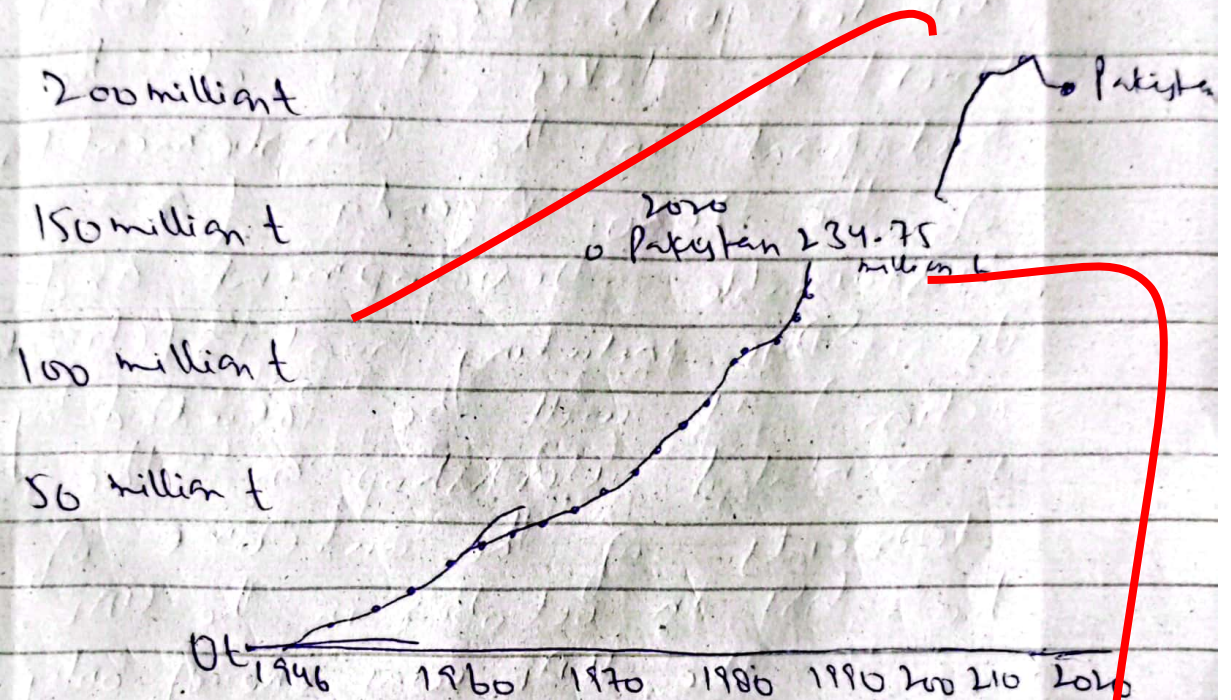
TOP 5 CO<sub>2</sub> Emitting Countries  
In Billion of Tons



TOP 5 current polluters. Source: our world in data



Annual CO<sub>2</sub> emissions  
carbon dioxide (CO<sub>2</sub>) emissions from  
fossil fuels and industry. Land use  
change is not included.



Source Global Carbon Project

[ourworldindata.org/co2-and-other-greenhouse-gas-emissions](https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions)

The 2023 UN Climate Change Conference will convene from 30 November to 12 December 2023 in Dubai, United Arab Emirates (UAE).

The first global Stocktake of the implementation of the Paris Agreement will conclude at COP28. Each Stocktake is a two-year process that happens every



five years with the aim of  
answering the world's collective  
progress towards achieving its  
climate goals. The first Global  
Stocktake takes place at the  
mid-point in the implementation  
of the 2030 Agenda for  
Sustainable Development and  
its SDGs including goal 13 (Climate  
action). It will be preceded by  
a mandated workshop on the  
elements of the outcome of  
the HST in October in the UAE.

The UAE was one of only  
29 countries to submit a  
revised second NDC ahead of  
COP27. The enhanced target  
is expected to translate into  
an absolute emissions reduction  
of about 93.2 million  
metric tons of CO<sub>2</sub>e.



"B"

## Fat Soluble Vitamin

Fat-soluble vitamins (A, D, E and K) are absorbed by fat while water-soluble vitamins are absorbed by water. They are absorbed by fat globules that travel through the small intestines and are distributed through the body in the blood stream.

unlike water-soluble vitamins, excess fat-soluble vitamins are stored in the liver and fatty (adipose) tissues for future use. They are found most abundantly in high-fat food and are better absorbed if eaten with fat.

### Fat-Soluble Vitamin And

Toxicity: Fat-soluble vitamins can accumulate to toxic level if taken in excess. whereas a well-balanced diet can't cause



toxicity, overdosing on fat-soluble vitamin supplements can. Symptoms and side effects of fat-soluble vitamin toxicity vary depending on the vitamin. They range from nausea and vomiting to slowed growth and birth defects.

## Four Types of fat-soluble Vitamins:

- **Vitamin A**: Is integral to bone formation, tooth formation, and vision. It contributes to immune and cellular function while keeping the intestines working properly.

- **Vitamin D**: aids in the development of teeth and bone, by encouraging the absorption & metabolism of phosphorus and calcium.

- **Vitamin E**: Is an antioxidant that helps fight infection and



Keeps red blood cells healthy.

Vitamin K<sub>2</sub> is central to blood clotting and also keeps bones healthy.

## Water-Soluble Vitamins.

Water-soluble vitamins are those that are dissolved in water and readily absorbed into tissues for immediate use. Any excess is quickly passed in urine. Because they are not stored in the body, water-soluble vitamins need to be replenished regularly through your diet.

Water-soluble vitamins rarely accumulate to toxic levels. Certain types of water-soluble vitamins, such as vitamin C, can cause diarrhea if taken in excess.

The water-soluble vitamins include the B-complex group and vitamin C.

Vitamin B<sub>2</sub> (Thiamine) helps to release energy from foods and is important in maintaining nervous system function.



Vitamin B<sub>2</sub> (riboflavin) promotes good vision and healthy skin and it is also important in converting the amino acid tryptophan into niacin.

Vitamin B<sub>3</sub> (niacin) aids in metabolism and the formation of hormones. It may help to control cholesterol and have anti-inflammatory benefits.

Vitamin B<sub>6</sub> (~~biotin~~) (pyridoxine) aids in protein metabolism and the production of red blood cells, insulin, and hemoglobin.

Vitamin B<sub>7</sub>: (biotin) helps release energy from carbohydrates and acids in the metabolism of fats, proteins, and carbohydrates from food.

Vitamin B<sub>9</sub>: (folate or folic acid) also aids in protein metabolism and red blood cell formation, and it may reduce the risk of neural tube birth defects.



Vitamin B<sub>12</sub> (Cobalamin) aids in the production of normal red blood cells as well as the maintenance of the nervous system.

Vitamin C (ascorbic acid) is central to iron absorption and collagen synthesis. It aids in wound healing and bone formation while improving overall immune function.

"C"

The cornea is the thin membrane that lies at the front of the eyes. Iris and pupil found behind the cornea. The crystalline lens found behind the pupil acts as like a camera lens by focusing light onto the retina which is present at the back of the eye.

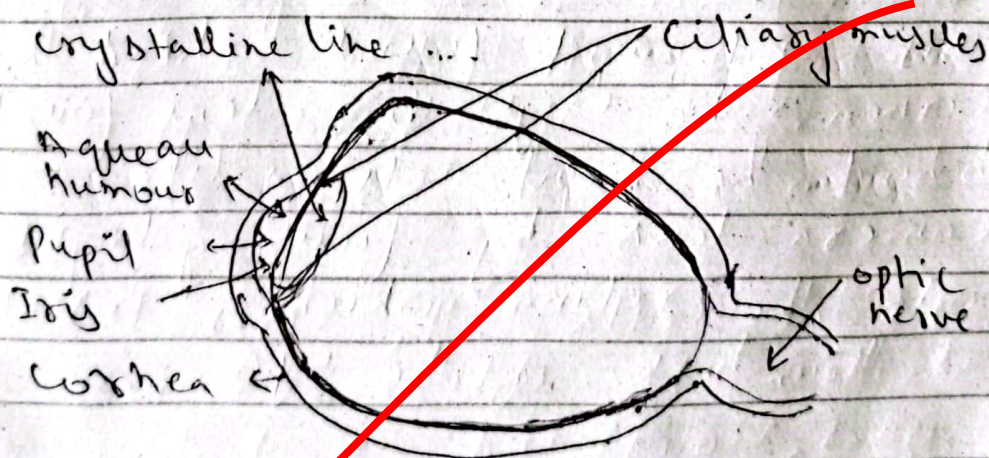
The process of vision  
Light enters the eyes through the cornea. After passing

9



through the cornea, light travels through the pupil, behind the cornea, there is a structure called iris which controls the size of the pupil. Behind the iris, there is the lens that focuses light on the retina and forms an inverted image of the object on the retina. The retina contains light-sensitive cells that get activated and generate electrical signals. These signals are sent to the brain by the optic nerve.

### Structure of Eye



a - Sclera and cornea form the outer layer



(b) Choroid, ciliary body, and iris constitute the middle layer.

(c) The innermost nervous coat of the eye contains the retina. The retina is the innermost layer. It contains three layers of cell - inner ganglion cells, middle bipolar cell, and outermost photoreceptor cell. The receptor cells present in the retina are of two types - rod cell and cone cell.

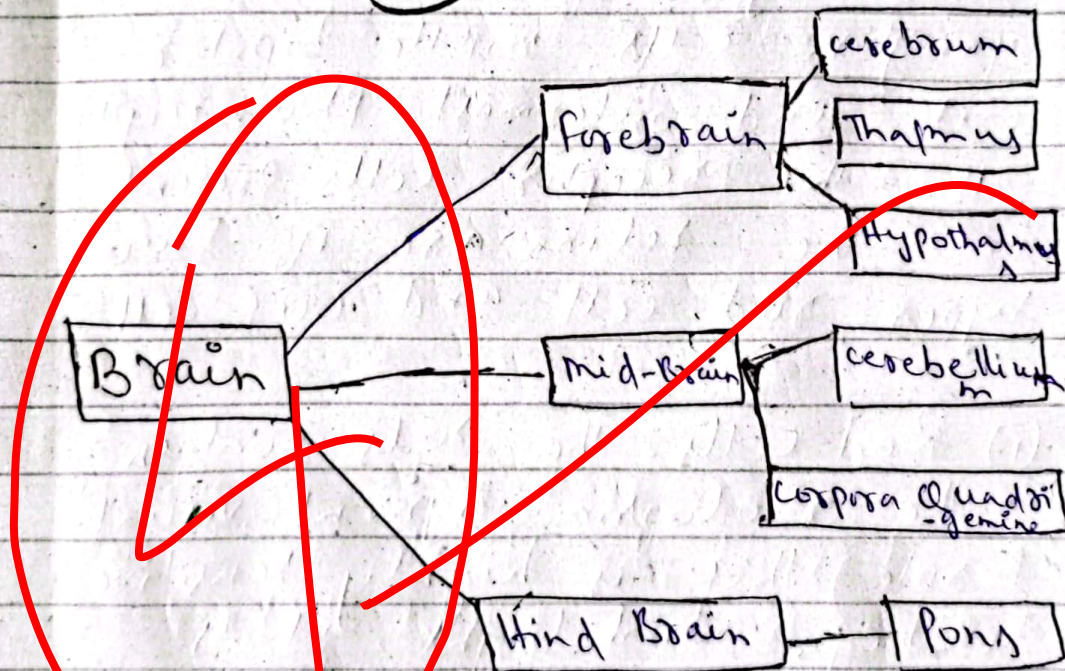
(i) Rod cells: The rods contain the rhodopsin pigment (visual purple) that is highly sensitive to light, dim light. It is responsible for twilight vision.

(ii) Cone cells: The cones contain the iodopsin pigment (visual violet) and are highly sensitive to high-intensity light. They are responsible for daylight and color vision.



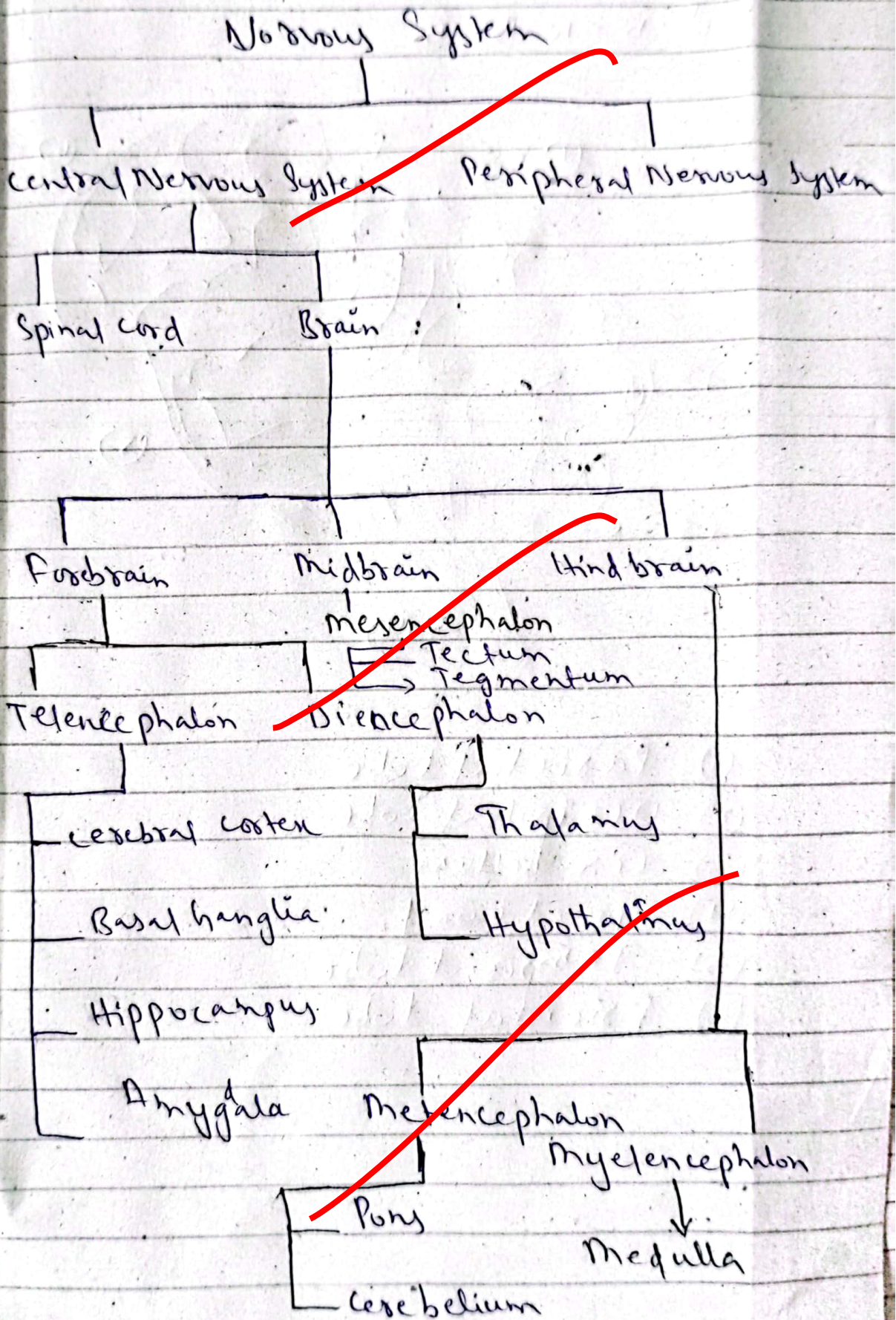
The innermost ganglionic cells give rise to optic nerve fibers that form the optic nerve in each eye and is connected to the brain.

"D"



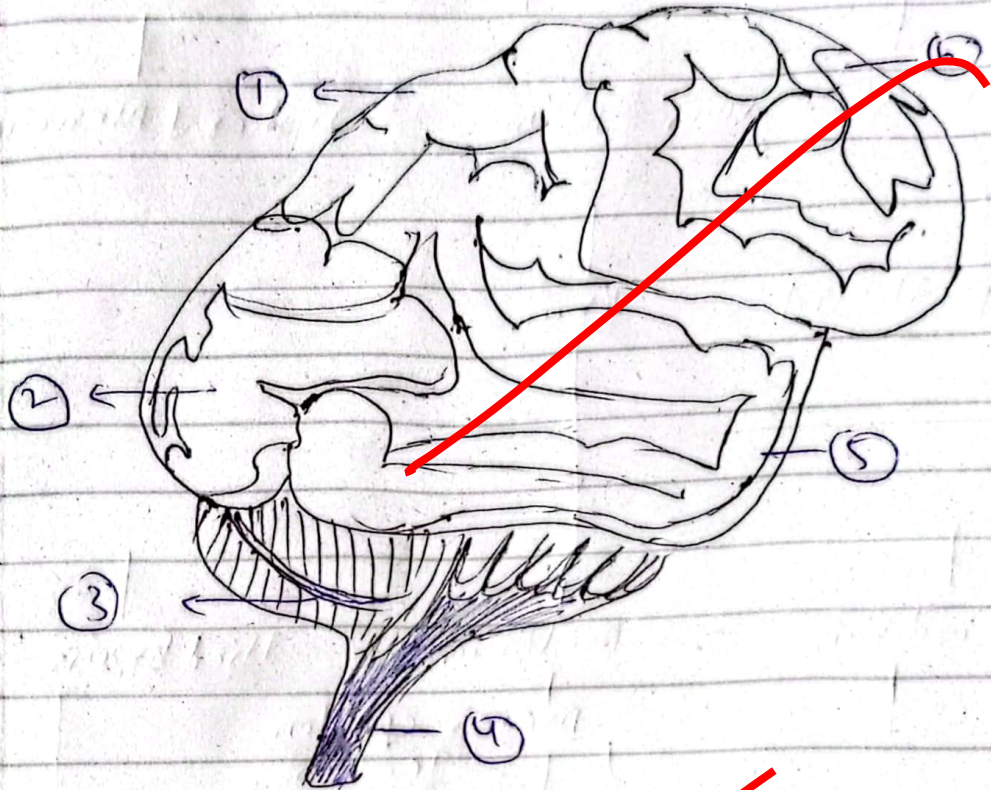
Flow chart of human brain







# Human Brain



- (1) Parietal lobe
- (2) Occipital lobe
- (3) Cerebellum
- (4) Spinal cord
- (5) Temporal lobe
- (6) Frontal lobe