

## Part II

### Section - I

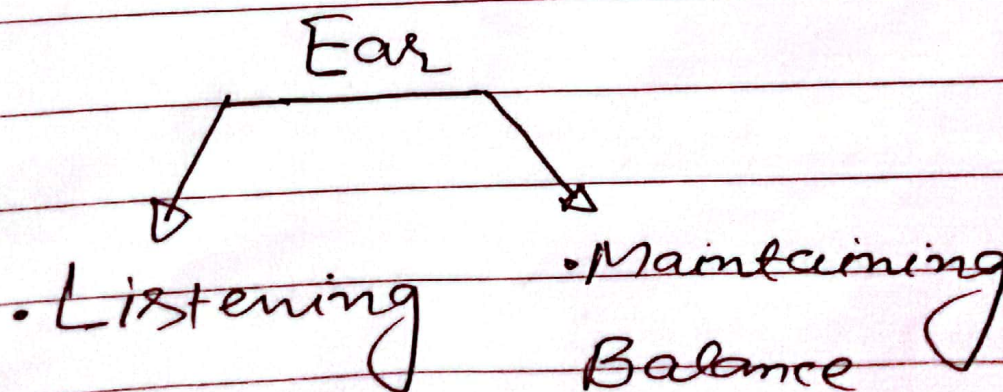
#### Question 04

(d)

#### Structure of Ear

##### Ear

is an important organ of human body. It is valuable for listening and maintaining the balance of human body.



# Structure of Ear

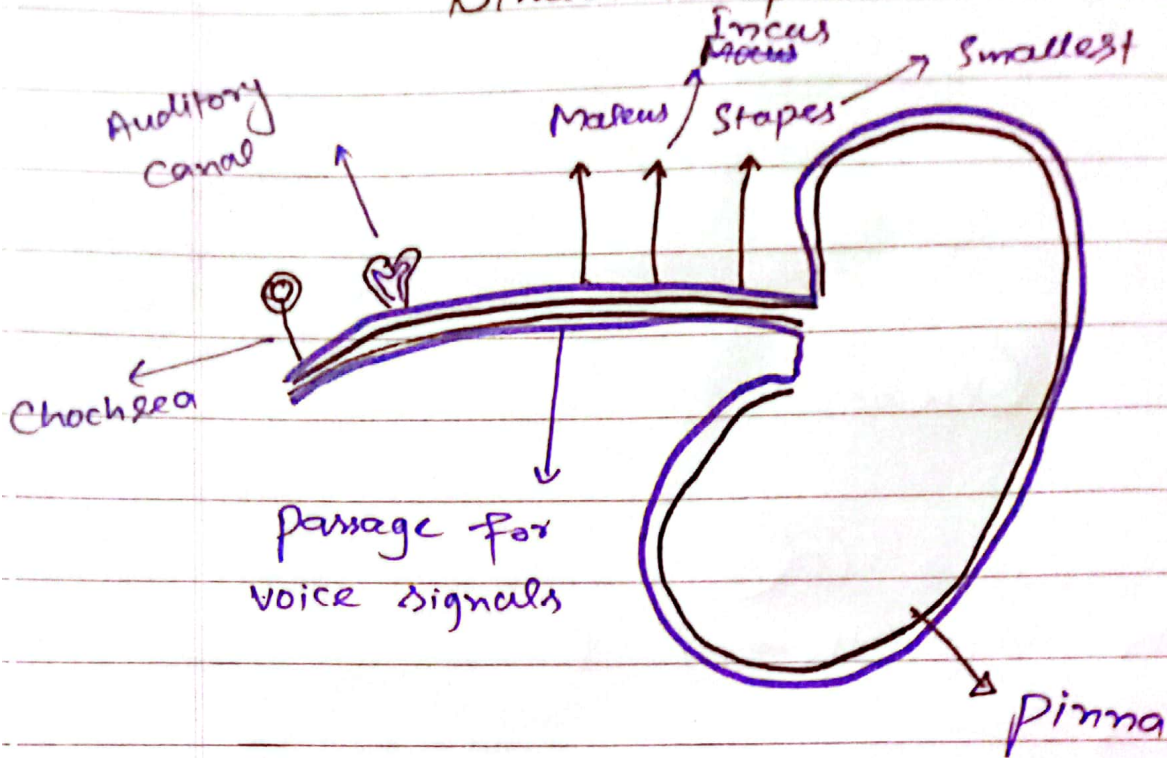
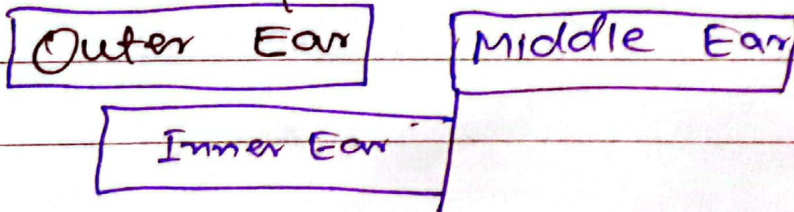


Fig: Structure of Ear

## Three Components of Structure



### Outer Ear

Pinna

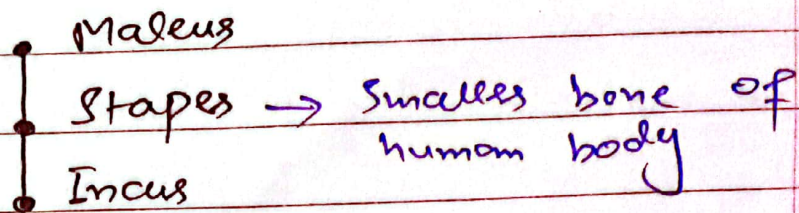
an important part of ear. It plays part in voice listening. voice strikes with it.

Passage of signals

signals of voice from other person passes through it

## Middle Ear

includes three tiny bones that maintains balance of the body. Furthermore, they also create vibration



## Inner Ear

- i) voice conversion takes place
- ii) voice is sent to brain for Translation
- iii) last part of ear attached with brain

### Auditory Canal

- sends voice signal to brain for translation

### Choclea

- converts electrical signal into voice.

Day \_\_\_\_\_

(b)  
Structure of Sun

Sun  
It is a ball-like celestial body that provides essential temperature to Earth. Without Sun, life can not be sustained on Earth

Structure

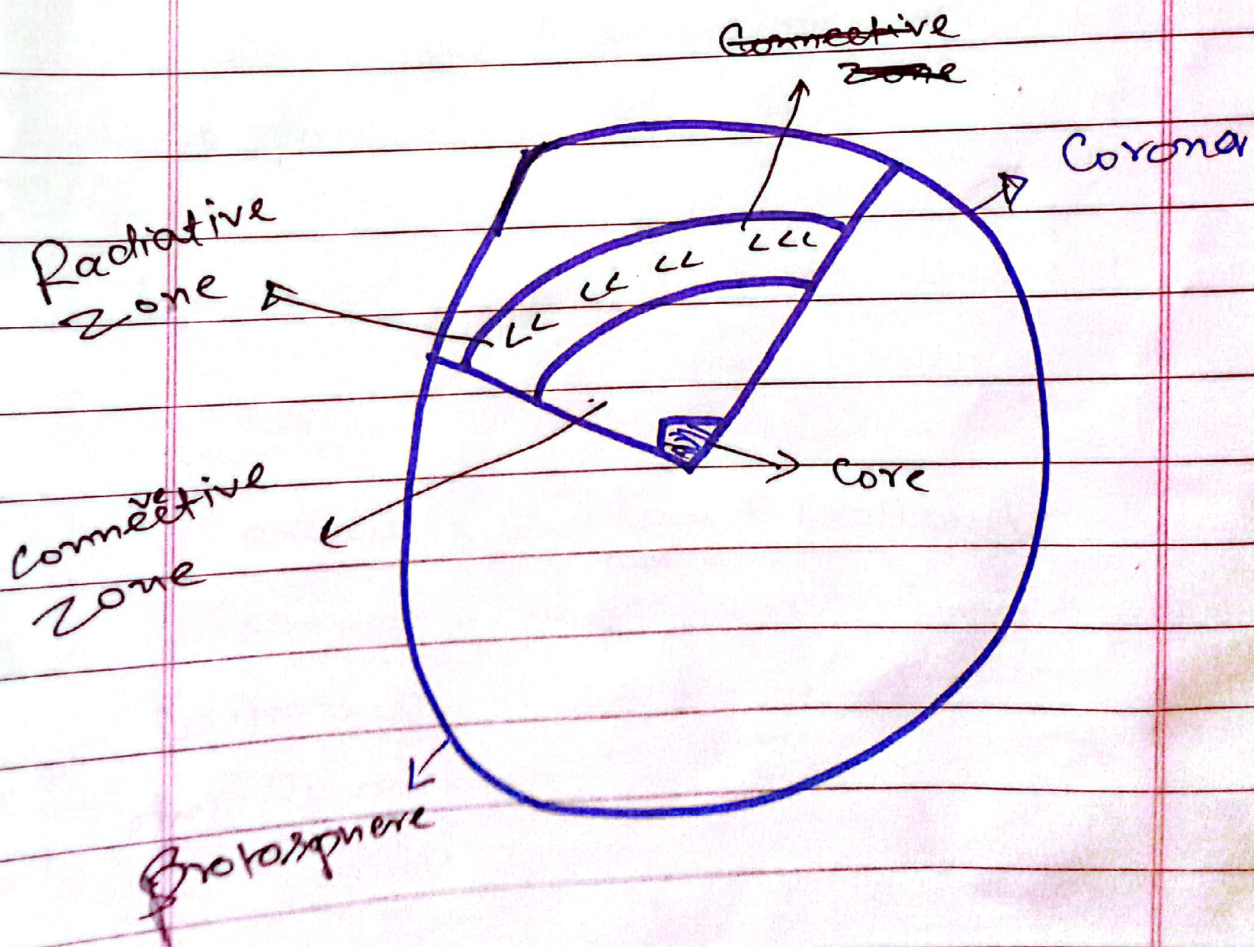


Figure: Structure of Sun

→ Corona

It is outermost boundary of Sun. It provides temperature to earth

→ Convective Zone

- i) includes plasma
- ii) also provides temperature to earth

→ Radiative zone

- i) provides temperature to earth
- ii) includes a process of radiation

→ Core

- i) main part
- ii) provides energy to Sun
- iii) Nuclear fission occurs for providing energy

## Characteristics of Sun

ii) 150 m<sup>1</sup> Temperature

ii) 93 mile distance from  
Sun

iii) A planetary star

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(a)

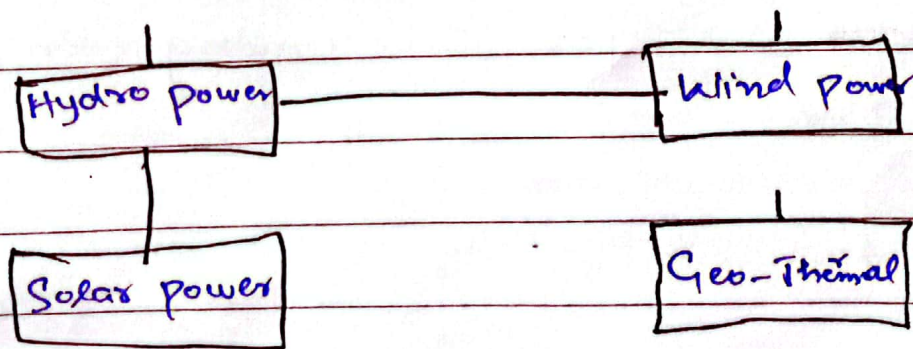
## Renewable energy Sources in Pakistan

### Renewable energy

- i) received from natural sources
- ii) viable option for mitigating climate change
- iii) could fulfill energy demands

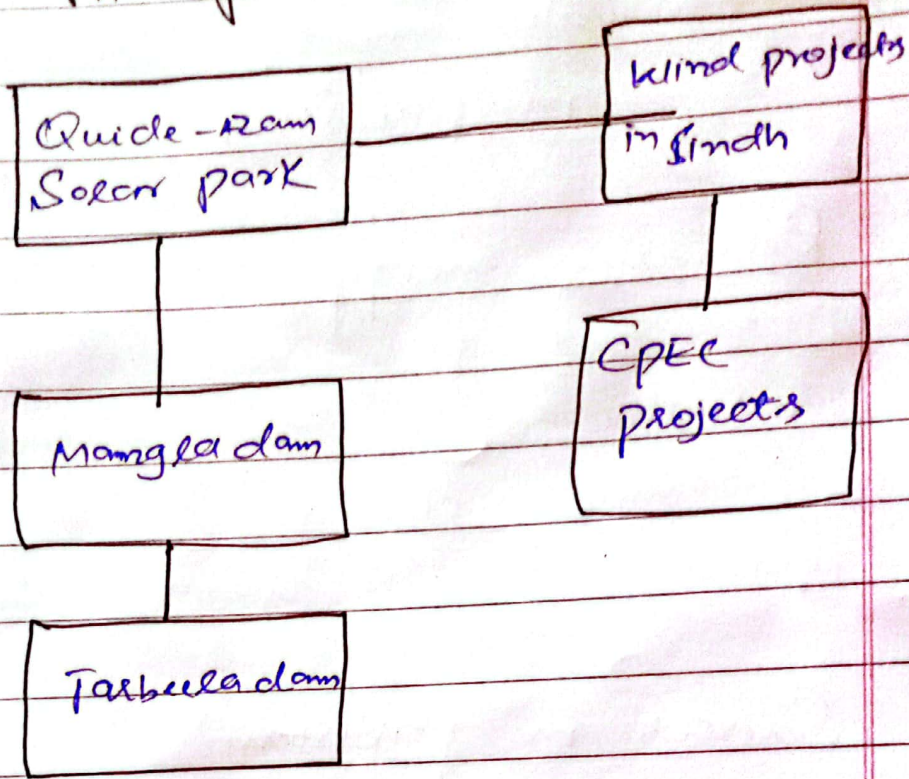
### Sources in Pakistan

Various sources of renewable energy are in Pakistan

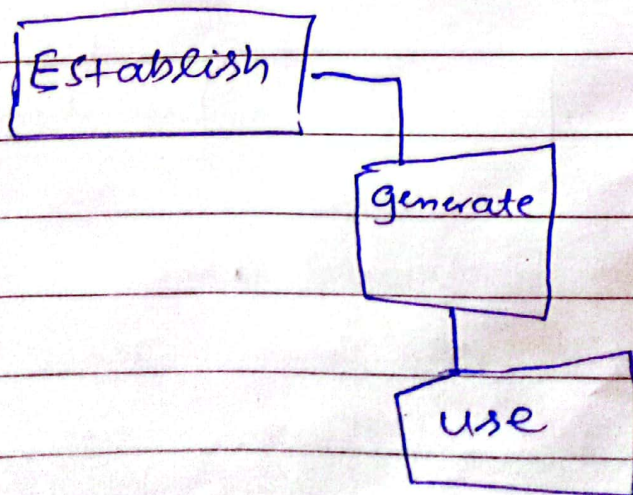


According to World Bank, wind power and solar can be generated excessively in Pakistan due to available high wind pressure and temperature.

# Projects of Renewable energy in Pakistan



Policy options to utilize these sources for overcoming energy crisis





- i) PAK should complete already continued projects
  - ii) It should increase more renewable projects under CPEC
  - iii) Develop a <sup>separate</sup> governing body for inspecting these projects.
  - iv) Establish dams and run-of-the river projects like India
  - v) Increase solar projects because they can prove effective due to high temperature in PAKISTAN
  - vi) It should attract foreign investment for these projects.
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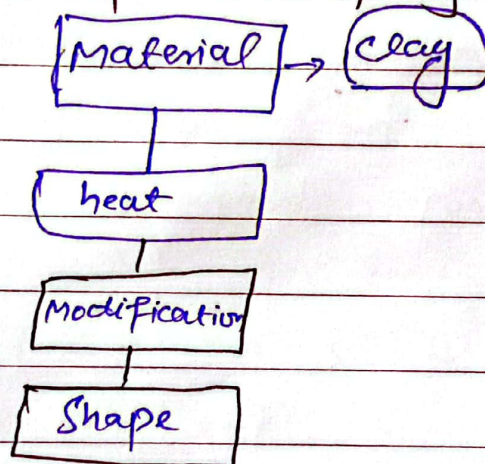
(C)

## Ceramic Material

→ Ceramic

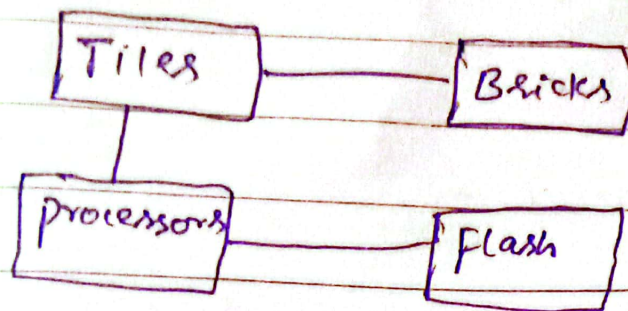
It is non-organic material that is being used increasingly in different places.

→ Process of developing Ceramic



It is heated with fire or any other modern sources for getting or moulding into its desired shape. & After heating, the substance can easily be moulded.

## Examples of Ceramic



## Usage of Ceramics

- Homes: Washrooms
- Computer: processors
- Tiles and Bricks in Construction

Recycling process of Ceramics:  
possible or not?

The recycle process of Ceramics is not possible like plastics. Because, they are heated and converted into the objects that can not be recycled. Their objects decay with the passage of time because of lacking the process of recycling.

Ceramics



Recycle



Difficult

↳

Plastics can be recycled but they are not recycled. Ceramics are not moulded again in heating that is biggest difficulty for recycling them.

## Question 02

Measure for global warming  
in Cop 29

Global warming

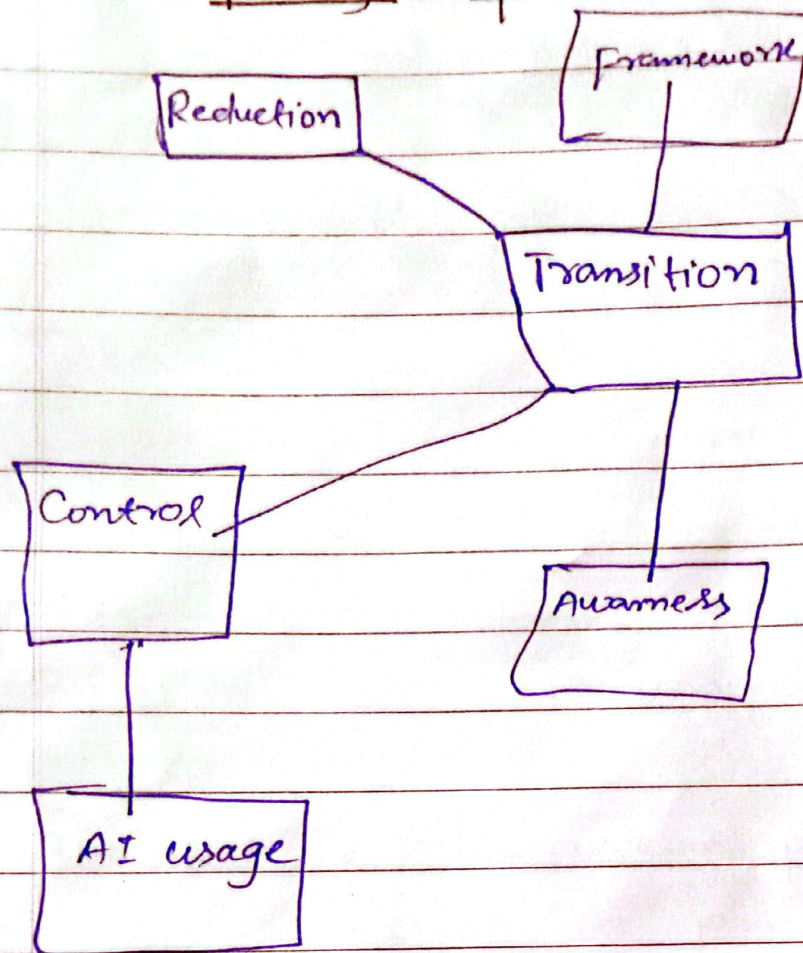
is climatic process  
that has resulted in the increase  
of temperature.

→ Policy measures for global  
warming in Cop 29

Cop 29

It will be held in  
in the last months of 2024.  
These cops are held every  
year for devising the strategies  
to cope with the problem of  
Climate change.

## Policy options



i) Reduce the substance or pollutants that accelerate the process of global warming. A proper and binding decision should be taken

ii) Renewable energy sources should be made necessary for energy

Day \_\_\_\_\_ Date \_\_\_\_\_

iii) AI technology should be kept in discussion for playing its role in decreasing global warming

iv) A proper framework of awareness to the public should be discussed

v) Action taking or accountability mechanism should be devised for the participants who do remain unable to fulfill demands

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(d)  
Conductors, Semi-conductors, Metals,  
Plastics, Ceramics

### Conductors

are used for conducting electricity. The current could flow easily from them. Therefore, they are used for conducting electricity.

- Current flow → Yes

### Examples

- Silver
- Iron
- Copper

### Semi-conductors

These fall between insulators and conductors. Some allow current to flow while others do not allow current to flow.

Current flow → Allowed by some



## Metals

These are found from Earth. They are present in mantle. These are used extensively.

### Examples

- Gold
- Steel
- Iron

## Plastics

These are organic materials and can be recycled as well. But they also have some repercussions for humans as well.

### Examples

- Plastic Toys
- Home domestic items
- Thermosetting plastics

## Ceramics

are non-organic material that are made up of clay by extensive heating. with heat, they can be moulded easily.

## Examples

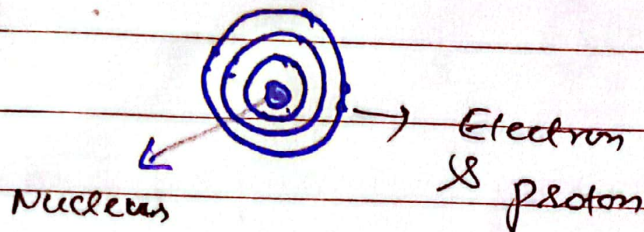
- Bricks,
- Tiles
- Classroom items
- processor of computer

(C)

→ Bond of atoms & Structure of water

### Atom

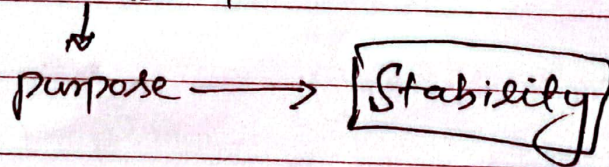
- i) a small particle.
- ii) Single dot of a pencil include 200 million atoms



Why atoms form Bonds?

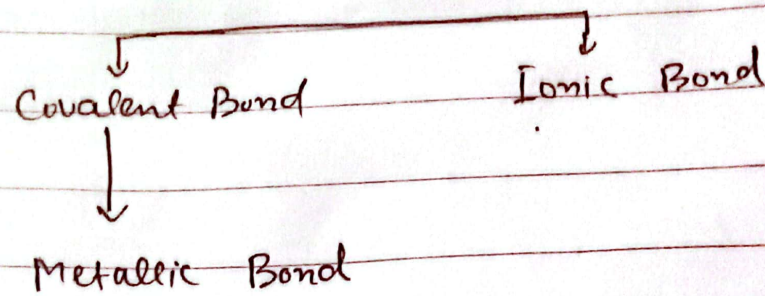
The atoms form bond only for one purpose and that is to gain stability

Atomic Bond



When atoms form bond, they become strengthened. The stability is gain under Octet rule.

## Examples of Chemical Bonding



## Structure of water

### Water

is a blessing of Allah.  
Without water, human survival  
seems in danger.



→ Drop of water

### Structure

- high density molecule
- density approximately 1.5 mg/l
- has no calories for humans
- has its own weight as well
- Colourless molecule.

(b)

→ Function of Arteries, Veins,  
Capillaries

### Arteries

are part of body. These are pipe for blood. These are also used for carrying blood. The circulation of blood is carried out through arteries. These carries oxygenated blood from heart to body.

- Arteries → oxygenated blood

Pulmonary Artery: it is only artery vessel that carries de-oxygenated blood

### Veins

these also perform the function of carrying blood. But they bring de-oxygenated blood to heart. Blood clotting also occurs in veins.

Veins → de-oxygenated blood

pulmonary vein: It is only a single vein that carries oxygenated blood unlike other veins.

## Capillaries

these are small blood vessels and are present in every part of our body. They only carry oxygenated blood

Capillaries → "only oxygenated Blood"

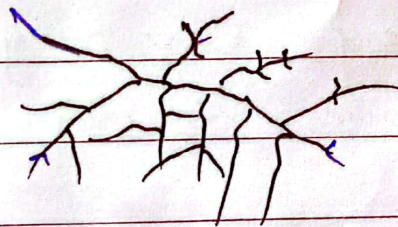
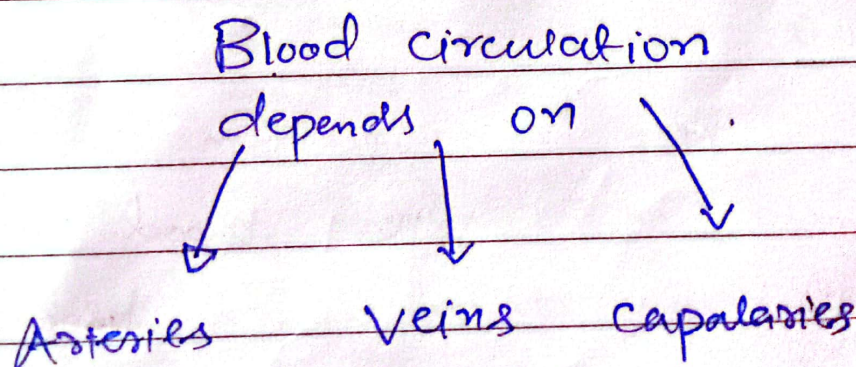


Figure: Capillaries



Section 02Question 08

(9)

Given Data: BROTHER

Codified as

Q D G S N Q A

Required : SISTER

Codified ?

Ans:

B R O T H E R

Q D G S N Q A

B R O T H E R

A Q N S G D Q

S I S T E R

Q D S R H R

Ans Q D S R H R

(b)

Given data, 1, 2, 6, 21 —

Required Missing no?

1, 2, 6, 21

$$1 + 1 = 2$$

$$2 + 2 + 2 = 6$$

$$6 + 3 + 3 + 3 + 3 + 3 = 21$$

$$21 + 4 = 25$$

25

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# Question of

Define IQ,

IQ

refers to intelligent Quotient.  
It is also a main part of four  
quotients of humans. Without int this  
Quotient, human lacks very basic  
skills and face difficulties.

Factors affecting IQ

- Family Background
- Education
- Hereditary
- Human genes
- Resources

(C)

Given data = 20, 22, 21, 21, 23

Required: Median?

Mode?

Range?

Mean?

Mean

$$= \frac{20 + 22 + 21 + 21 + 23}{5}$$

$$= \frac{21.07}{5}$$

$$= \boxed{21.4}$$

$$\begin{array}{r} 21.4 \\ 5 \overline{) 107} \\ \underline{60} \\ 7 \\ \underline{5} \\ 20 \end{array}$$

Median

20, 22, 21, 21, 23

middle value = 21

Range 20, 22, 21, 21, 23

Largest - Smallest

$$23 - 20$$

$$= 3$$

Mode

20, 22, 21, 21, 21

21