

## Part II

Increase length  
Add headings  
Draw diagrams  
Work on math portion

Q.2

### b. Solid waste management

Ans

#### Defination

Solid waste is the type of waste which is neither liquid nor gaseous. Management of solid waste is an important step it includes reduction, recycling, composting, water-to-energy treatment and separation of wastes along with other few steps.

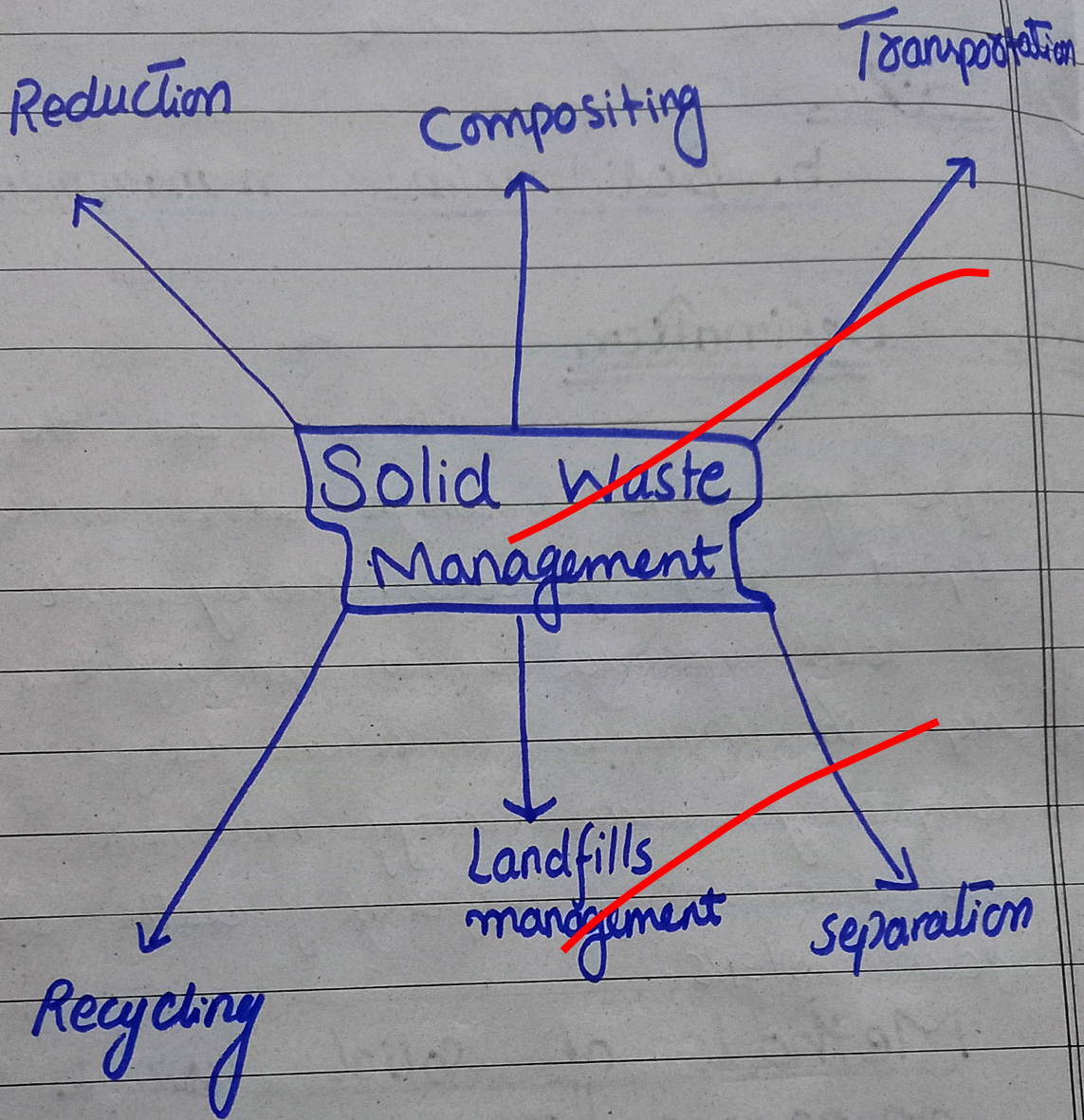
#### Methods of solid waste management

Following steps are performed for the effective management of solid wastes

##### 1. Reduction

Reduction and minimization of wastes is primary concern in solid waste

management



## 2. Transportation

Second step included in solid waste management is the transportation of the waste to appropriate site away from residential areas.

### 3. Compositing

In compositing the volume of wastes, in solid form, is reduced to make it easy to adjust.

### 4. Separation from other forms of waste

Solid waste is separated from other forms of waste such as liquid and semi-solid wastes to manage it in effective way.

### 5. Recycling

Recycling is a useful technique which is not only helpful in reduction of waste but it is way to reduce economic burden by manufacturing of recycled products.

### 6. Managing Landfills

Management of landfills is another essential step in solid waste management in which solid waste landfills are to locate on the places

which is away from residential and commercial areas so that its harmful and polluted air cannot reach and affect human health.

Q 2.d Renewable energy resources CPEC

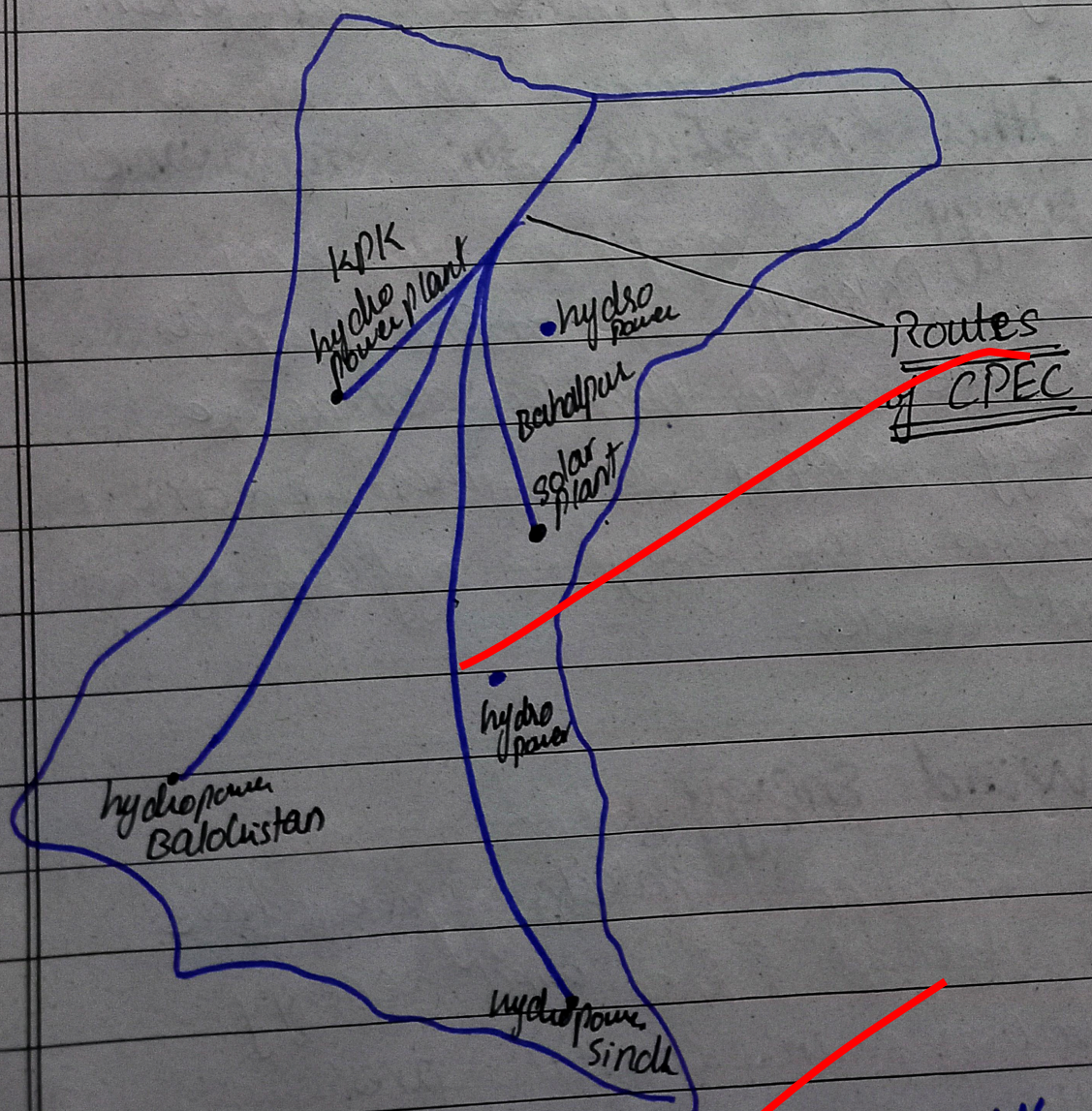
Ans Introduction

China Pakistan Economic Corridor is a flagship project of China's Belt and Road initiative. Under this project various sub-projects of renewable energy are launched which include solar plants, ~~coal~~ Hycho-power plants, and wind plants.

Solar plants under CPEC

Pakistan has tremendous potential to generate solar energy. In summers 12-14 hours of sunlight make it most suitable country to generate solar energy.

Billions of investments by China have arrived in Pakistan to initiate projects of solar energy production. At this time under CPEC Bahawalpur solar plant has been installed.



Map of Pakistan with renewable energy projects under CPEC

## Hydro-power projects under CPEC

Various hydro-power projects have been installed under CPEC in different regions of Pakistan. Hydro-power plants are present in Punjab, Sindh, Khyberpakhtunkha, and Balochistan.

## Other initiatives for renewable energy

Pakistan is reducing its dependence on climate destructive energy sources for this electric vehicles are being replaced against fuel vehicles.

## Wind Energy

Pakistan also have huge potential for wind energy production in coastal areas of Sindh desirable winds provide suitable environment for wind energy Pakistan is looking forward to exploit these resources for clean

energy production

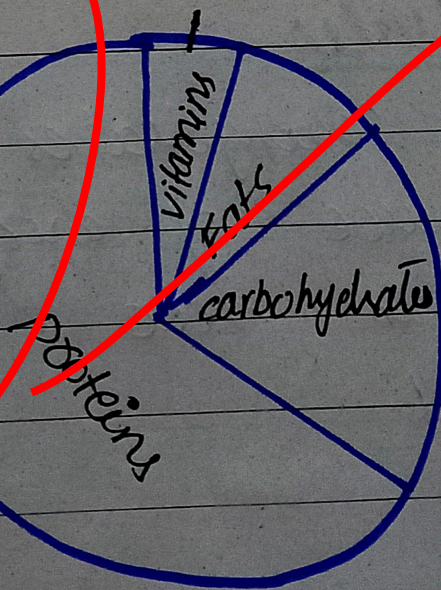
Q 2.C

## Balanced diet

Ans

What is balanced diet?

A balanced diet is the diet which is incorporated with all the essential nutrients and minerals necessary for balanced growth. These nutrients include a balanced proportion of proteins, carbohydrates, fats and vitamins.



portions of balanced diet

According to World Health Organisation: body requires a greater portion of proteinaceous diet as compared to other portions i.e carbohydrates, fats and vitamins.

## Proteins

Proteins form a major component of balanced diet. Muscles in human body are made up of proteins. Also enzymes working in human body are made up of protein. So for them to work properly proteins are vital component of daily balanced diet i.e eggs, meat.

## Carbohydrates

Carbohydrates are instant source of energy. These are found in rice, wheat and bread.

## Fats

portion of fats is also vital for balanced diet



These are found in eggs, milk, cheese and nuts.

## Vitamins

Vitamins play an important role in normal growth. Deficiency of vitamins can lead to weak immune system, and other diseases such as rickets, night blindness etc.

## Benefits of balanced diet

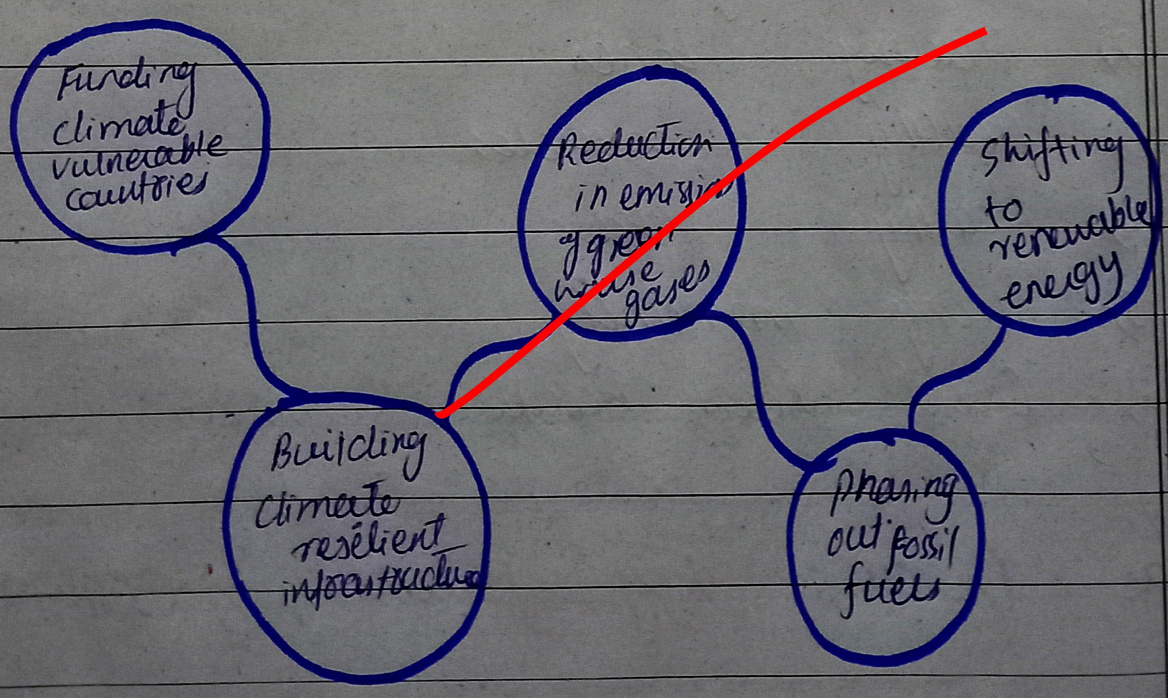
- 1) Optimal growth
- 2) Healthy bones
- 3) Healthy muscles
- 4) Healthy hair
- 5) Strong immunity
- 6) Good heart health

Q2a: Discuss key features of COP-28

Introduction: COP-28

was held in United Arab Emirates where leadership of various countries gathered to find a sustainable solution to raising climate issues. Its features include, phasing out of fossil fuels, shifting to renewable energy, reduction in emission of green house gases, funding vulnerable and climate damaged countries and contributing towards building climate resilient infrastructure.

## Key features of COP-29



## Funding vulnerable countries

In COP-28 developed countries pledged to provide yearly funds to poor and developing countries which are vulnerable to climate change. Previously 100bn pledged by developed countries did not meet to expectations.

## Building climate resilient infrastructure

More focus would be provided to building climate resilient infrastructure in developing countries.

Reduction in emission by major contributors of green house gases countries which are major contributors in green house gases must look to reduce emission.

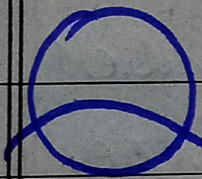
## Shifting to clean <sup>re</sup> energy resources

Renewable energy resources

would be preferred over fossil fuel generated energy

## Phasing down of fossil fuels

A resolution was presented by member countries for "phasing out" of fossil fuels which were rejected by UAE and replaced with "Phasing down".



# 4.c.

Distinguish between - - - -

## Solar Eclipses and Lunar Eclipses

Ans  
Solar Eclipses and Lunar Eclipses are caused by the rotation of earth in <sup>solar</sup> eclipses moon comes between sun and earth while in <sup>lunar</sup> eclipses earth comes between sun and moon.

## Lunar Eclipse

⇒ In Lunar eclipse Earth comes between Sun and moon.

⇒ Shadow of Earth falls on the moon.

⇒ it consists of three phases in which degree of eclipse varies.

⇒ it is seen at time of emergence of new moon. It lasts for few minutes.

## Effects of Eclipses

There are many myths about the impacts of solar and lunar eclipses but scientific

## Solar Eclipse

⇒ In solar eclipse moon comes between Earth and sun.

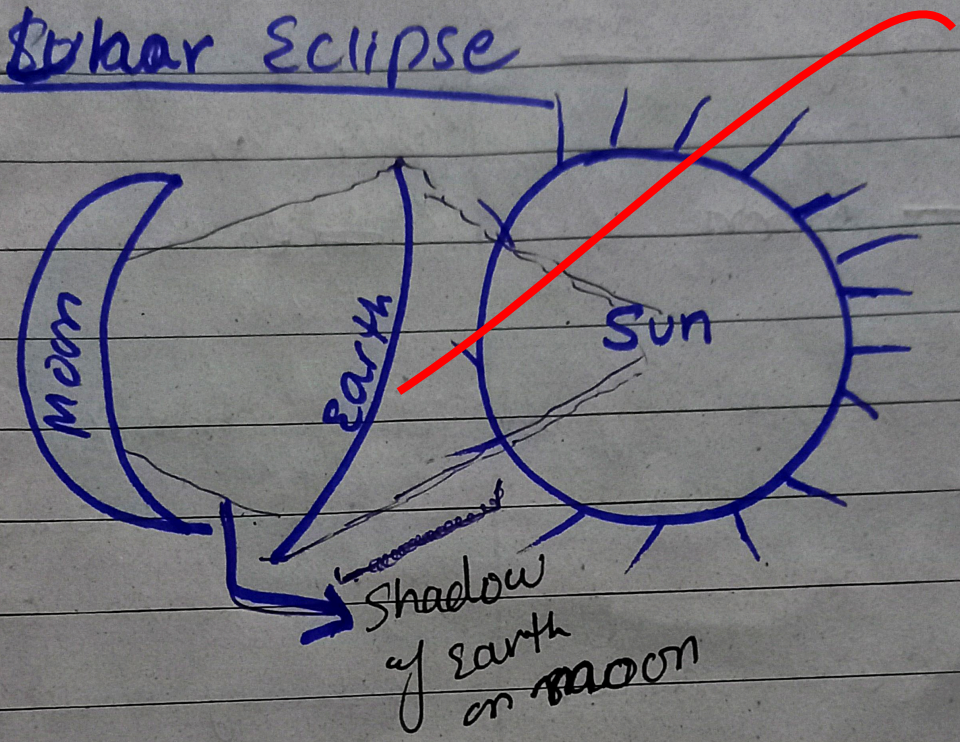
⇒ shadow of moon falls on the Earth.

⇒ it consists of various phases which can cause dark by hindering light of sun.

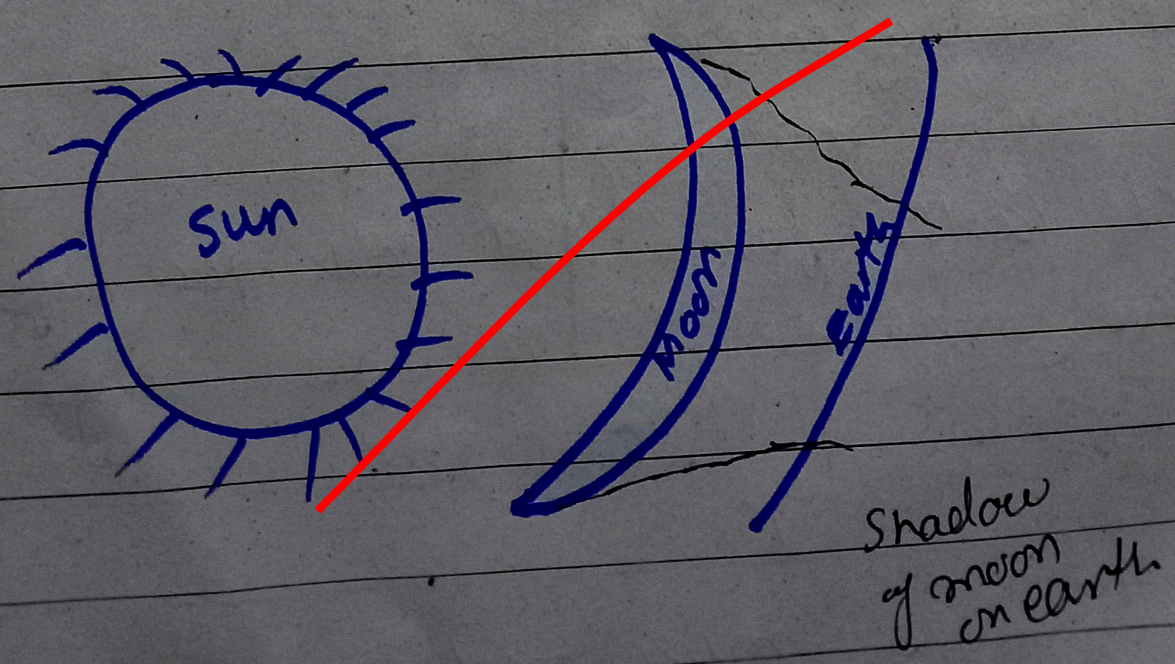
⇒ it can be seen in day time. It lasts for half an hour only.

Studies found no serious impacts on environment or human health. But looking directly towards sun during eclipse can compromise eye sight.

### Lunar Eclipse



### Solar Eclipse



Q #4.d

What is doping in semi-conductors. Discuss different types

Ans

Doping in semi-conductors

Doping in semi-conductors is type of impurities that are added in semi-conductors to enhance their conductivity.

Semi-conductors which are added with doping impurities are known as intrinsic semi-conductors.

Discuss different types of ceramics

Ceramics ceramics are inorganic materials made up of clay. These are usually non-conductors of electricity.

Types of ceramics

## Modern ceramics

These are type of ceramics which have more refined composition and their strength and hardness is better than typical ceramics.

## Classical ceramics

These are made up of typical composition. Their strength and endurance is less than that of modern ceramics.

## Properties of ceramics

- ⇒ Brittle in nature
- ⇒ Non-conductors
- ⇒ Act as insulators
- ⇒ Resistant to pressure
- ⇒ Resistant to temperature

## Uses of ceramics

- ⇒ used in electricity equipments
- ⇒ used in making artificial joints
- ⇒ used in making daily<sup>we</sup> utensils
- ⇒ used in aerospace industry



Q. 4.a

How earth quakes are generated

- Ans 1) Earth quakes are generated by the movements of tectonic plates inside the crust of earth.
- 2) When tectonic plates move due to geographical changes vibration of earth occurs.
- 3) It oscillates earth in to and fro direction.
- 4) As result of tectonic plates movement earthquake occurs along with formation of new mountains.

Distinguish with Tsunami

Earth quake usually occurs and result in oscillatory motion of the earth while Tsunami occurs at the level of seas and oceans where it

can cause waves of water to travel long distance which can result into destruction at coastal areas. In tsunami earth surrounding region of ocean or sea also faces jolts.

Q 4.6. Coriolis force ---

Ans

Coriolis force is the force which is responsible to attract flow of air while spinning it in circular path.

How Hurricanes are generated

Hurricanes are generated as a result of Coriolis force. Hurricanes include particles of dust. The force in hurricanes cause them to travel great distance. Hurricanes are generated using force of Coriolis and responsible

for contribution to air pollution,

## Effects of Hurricanes

(i) Environmental impacts: cause air pollution

(ii) Impacts on human health:  
respiratory problems  
Bring eye infections  
can worsen asthma.

## Section - II

Q. No. 6

a) 3 years ago,

$$\text{age of son} = 30 - 3 = 27 \text{ years}$$

$$\text{age of father} = 27 \times 3 = 81 \text{ years}$$

Now,

$$\text{age of son} = 30$$

$$\text{age of father} = 81 + 3 = 84 \text{ years}$$

84 years

6 b.

value of  $y$ ?

$$\text{Mean of } 10, 30, y \text{ \& } 50 = 50$$

$$\boxed{\text{value of } y = 10}$$

6 c. i. missing terms

$$2, 6, 18, 54$$

$$2, 2+4, 6+12, 18+36, 108$$

$$\boxed{2, 6, 18, 54, 108} \text{ Ans}$$

6 c. ii.

$$\boxed{3125, 256, 32, 4, 1} \text{ Ans}$$

Q. # NO. d.

$$\text{Product of 2 number} = 320$$

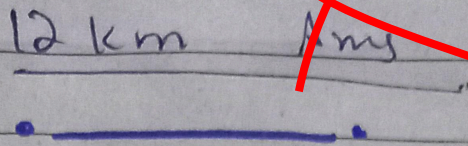
$$\text{Ratio} = 1:5$$

$$= x^2 : 5x$$

Q. No. 8

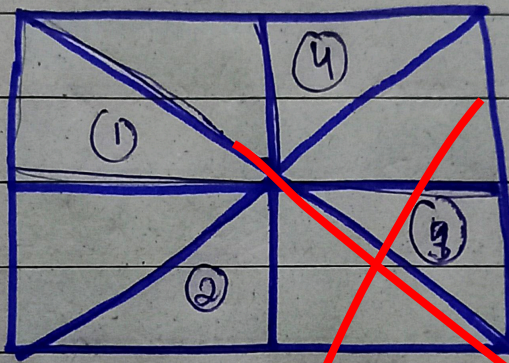
a.

12 km Ans


b.

total slice = 8

Raisin slice = 3

probability =  $\frac{3}{8}$  approxc.

4 triangles are there in this figure

d. Factors can affect IQ.

Following factors can affect IQ.

- 1) Genetics
- 2) Life experiences
- 3) Training

4) Knowledge.

