

USA (mock)

Date: _____

(OR)
(b)

Increase length

Add headings

Draw diagrams

Work on math portion

SOLID WASTE MANAGEMENT

Solid waste management is the systematic management of the generation, transfer, recycling and disposal of solid waste (discarded leftover of our advanced consumer society).

METHODS :-

REDUCE Reduction of solid waste is the first step or method to manage solid waste

RECYCLE

Recycling of products is also necessary in this process

REUSE

By reusing the waste, reduction and recycling can be made easy

RECOVERY

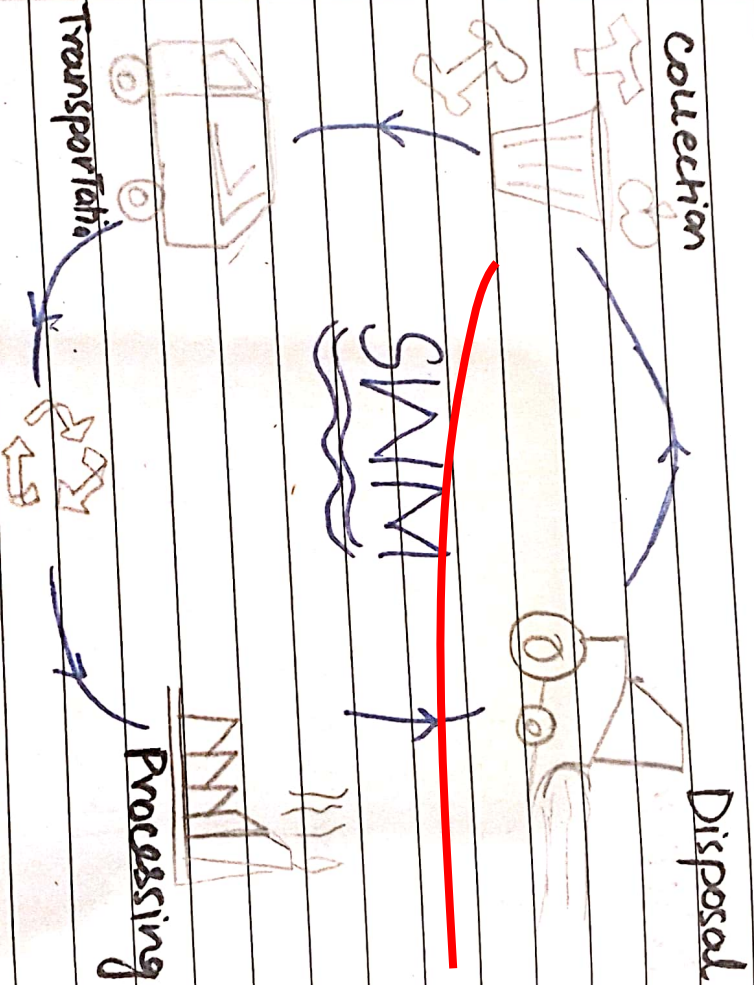
Recovering energy from the waste.

LANDFILL

Safe disposal of waste.

Effective waste management often involves the combination of these methods according to needs and capabilities of the region.

Process Flow of SWM:



Recovery

SWM in Pakistan:

Pakistan generates 30 million tons of solid waste per year which is not properly treated.

X _____ X

(c)

Date: _____

BALANCED DIET

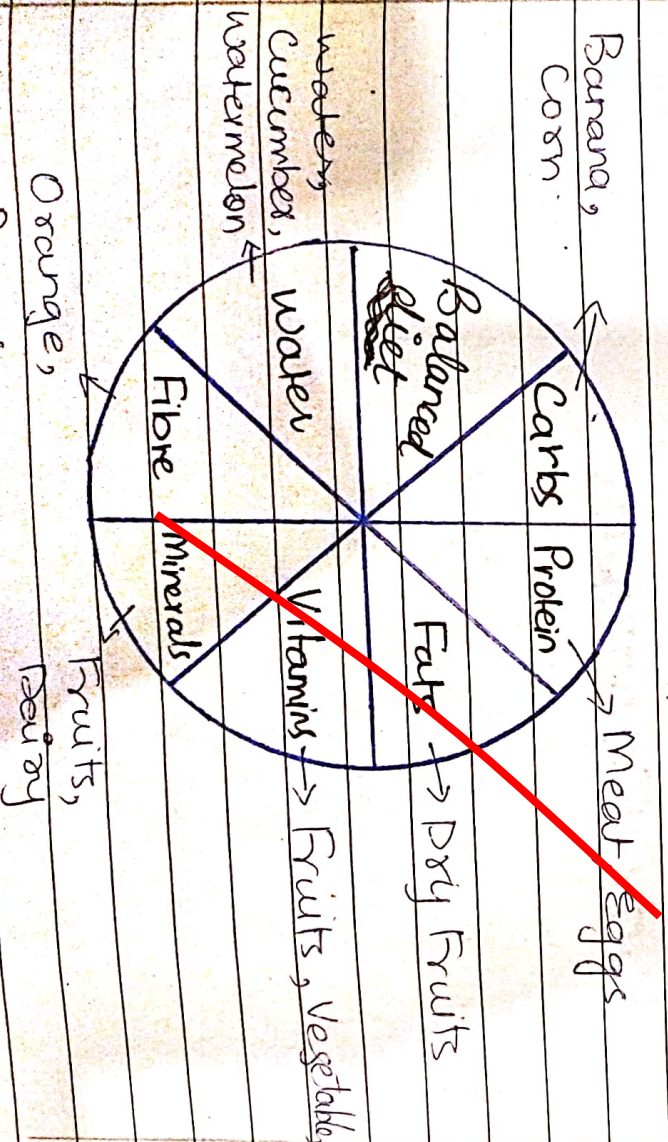
A balanced diet is a one which provides enough amount of all nutrients, not too much or not too little of proteins, fats, carbohydrates, mineral and vitamins.

Components of Balanced Diet:

Balanced Diet includes:

- Proteins
- fats
- Carbohydrates
- Minerals
- Vitamins

Sources of Balanced diet:



Benefits:

- 1 - Balanced diet helps to build muscles.
- 2 - It strengthens bones.
- 3 - It boosts immunity.

X ————— X

(a)

COP-28

(UNEP) Conference of Parties on the issue of climate change held its 28th meeting in UAE in Nov 2023. Its main goal is to limit global temp increase to 1.5°C.

KEY FEATURES

1 - The main feature of COP 28 is that it concluded with an agreement of "start of 1st end of fossil fuel era".

2 - The Green Climate Fund (GCF) secured new pledges from six countries.

3- Eight Donor govts committed over \$ 174 billion to the Least Developed Countries fund and Special Climate Change Fund.

4- It promised to implement strategies to reduce energy consumption of cooling system.

5- Planning old refrigerators that contribute to climate warming.

Loss and damage Fund: Under COP 28 \$ 700 million pledged but its not enough. In fact its loss than 0.2% of what is needed.

Reduce emissions to reach Net Zero Target.

Plays from developed countries who contributes largely in emission

Spend on developing countries who suffer the most due to Climate change.

(a)

RENEWABLE RESOURCES

UNDER CPEC

① Cacho Wind Power Project

A project under CPEC is a renewable resource project, installed in Thatta, Sindh. Its 50 MW capacity.

② Karot Hydropower Project

It is located in Thelum, Punjab. It created more than 4000 jobs during construction. It is a hydropower plant. Its installed capacity is 720 MW.

③ Arad Patan Hydropower Project

It is also located in Sindh, Punjab. It is an independent power producer. It created over 3000 jobs.

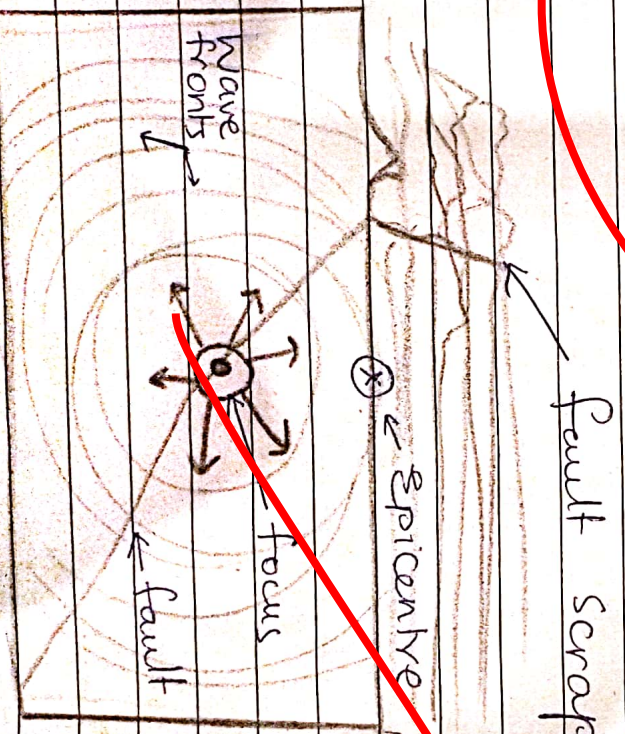
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Q4 (a)

EARTHQUAKES

Generation

The tectonic plates in the earth's crust are always moving. But they stick at their edges due to resistance friction. When the stress on edges overcomes friction, sudden energy is released in the form of seismic waves which creates vibration in the earth's crust as a result of abrupt movement in tectonic plates and causes earth to shake.



Date: _____

Earthquake

1- Caused by sudden energy release in the form of seismic waves

2- Under the earth's crust

3- Can affect the region near epicentre

Tsunami

1- Caused by displacement of large body of water.

2- Mostly in ocean body

3- Can affect coastlines

(b)

CORIOLIS FORCE

Coriolis Force is an apparent force that acts on a mass moving in a rotating system. Such as Earth. It affects the moving object to the right in the Northern Hemisphere and to the left in Southern Hemisphere. It affects the direction of wind and ocean currents.

HURRICANE

Reveration:

Hurricane is a tropical

that refers to a large scale closed circulation system in the atmosphere which combines low pressure and strong winds, that rotates counter-clockwise in Northern hemisphere and clockwise in Southern hemisphere.

All tropical cyclones begin from over warm ocean and loses strength when they move over cool water and land.

Effects

- 1 - Hurricane carry a lot of rain and causes flood
- 2 - Storm surge
- 3 - Tornadoes.

(C)

SOLAR ECLIPSE

When moon comes b/w sun and earth

② When moon casts shadow on earth

③ When New moon occurs.

LUNAR ECLIPSE

When earth comes in b/w sun and moon

When moon comes in earth's shadow.

When full moon occurs.

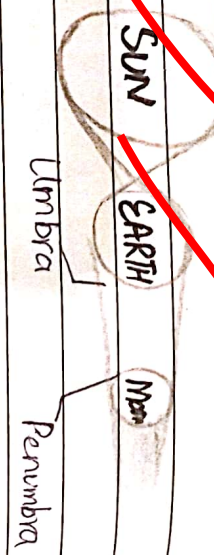
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Types of solar eclipse are

- i - Total solar eclipse
- ii - Partial solar eclipse
- iii - Annular solar eclipse

Its types are

- i - Total lunar eclipse
- ii - Partial lunar eclipse
- iii - Penumbra lunar eclipse.



Type

1

2

(d)

Doping in semiconductors

Doping in semiconductors involves intentionally introducing impurities to a crystal lattice of semiconductor material to modify its electrical properties.

There are two types of Doping.

N-Type Doping: when an element having $5e^-$ in valence shell. Eg: Phosphorus.

P-Type Doping: when dopant has $3e^-$ in valence shell. Eg Boron

Date: _____

CERAMICS

~~These~~ Ceramics are inorganic non-metallic materials made by shaping and firing at high temperature

Types:

- 1 Traditional Ceramics (Clay based) are used in pottery, bricks & tiles.
- 2 Advanced Ceramics (High Performance) are used in cutting tools and automotive components.
- 3 Bio ceramics are used in ~~reconstructive~~ dental and orthopedic implants
- 4 Glass-Ceramics are used in cookware.

X

X

ABILITY

Q6

(a)

Data

5 years ago,

$$F = \text{Father's Age} = F - 5$$

$$S = \text{Son's Age} = S - 5$$

Since

Father's age is thrice the Son's Age

$$F = 3S$$

$$F - 5 = 3(S - 5)$$

$$F - 5 = 3[(30) - 5]$$

$$F - 5 = 40 - 15$$

$$F - 5 = 75$$

$$F = 75 + 5$$

$$\boxed{F = 80}$$

Father is 80 years old Now.

Answer

ABILITY

Q6

(a)

Data

7 years ago,

$$F = \text{Father's Age} = F - 5$$

$$S = \text{Son's Age} = (S - 5)$$

Since

Father's age is thrice the Son's Age

$$F = 3S$$

$$F - 5 = 3(S - 5)$$

$$F - 5 = 3[(30) - 5]$$

$$F - 5 = 90 - 15$$

$$F - 5 = 75$$

$$F = 75 + 5$$

$$\boxed{F = 80}$$

Father is 80 years old Now.

Answer

b)

Data

Mean of 10, 30, Y and 50 = 50
calculate $Y = ?$

\therefore Mean = $\frac{\text{Sum of observations}}{\text{no of observations}}$

$$\frac{10 + 30 + Y + 50}{4} = 50$$

$$\frac{90 + Y}{4} = 50$$

$$90 + Y = 50 \times 4$$

$$90 + Y = 200$$

$$Y = 200 - 90$$

$$Y = 110$$

Aus.

c)

i) 2, 6, 18, 54, 162

ii) 3125, 256, 27, 4, 1

d)

300 304

If $A \times B = 320$

$A : B = 1 : 5$

$A^2 - B^2 = ?$

~~$A = 2$~~ $B = 5A$

If $A = 8$

$B = 5(8) = B = 40$

$1 : 5$
 $8 : 40 \checkmark$

$8 \times 40 = 320 \checkmark$

$(8)^2 - (40)^2$

64 - 1600

1536 Ans

SHOKIA

Q8

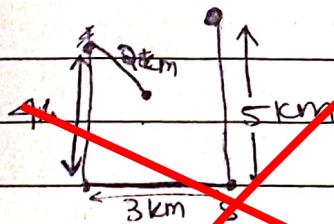
~~c) = 12 triangles~~

d) Factors affecting IQ

Following factors affect IQ

- i) Genetics
- ii) Environment
- iii) Education
- iv) Nutrition
- v) Stimulation and enrichment
- vi) Cultural factors.

a)



It is 2 km away from initial point.

Ans

Data

2 scooties = 96000 each

1 scooty =

A = 96000: 20% profit

B = 96000: 20% loss

First time

1.20 times, CP = 96000

0.80 times, CP = 96000

→ Cost Price of First Scooty = $(96000)(1.20) = 80,000$

→ Cost Price of Second Scooty = $96000 \times 0.80 = 120,000$

Both = 200,000

Overall Gain or loss

$192,000 - 200,000$

$= -8000$

Since it's in -ive so it indicates loss