

Mock 2024

Q.1. Enlist the available sources of renewable energy in Pakistan and suggest policy options to utilize these sources to overcome the present energy crisis.

Renewable energy sources

in Pakistan include:

1. Solar energy
2. Wind energy
3. Hydro energy
4. Geothermal energy
5. Biomass energy (agricultural waste, livestock waste and municipal waste).

6. Biofuels (from crops like sugarcane, corn and canola)

Policy options to utilize these sources and overcome the energy crisis.

1. Set renewable energy targets

and quotas.

2. offer incentives for renewable energy investment.

3. Develop grid infrastructure to support renewable energy integration.

4. Promote decentralized energy generation.

5. Encourage Public-Private Partnerships for large-scale renewable energy projects.

b. Explain the structure of sun.

The structure of sun consists of:

1. Core: Central region where nuclear reaction take place, with temperature around 15 million °C.

2. Radiative zone: Surrounding layer where energy generated in the core is transferred

through
3. convective layer where energy is transferred by currents and solar

4. Photosphere: The solar surface where solar radiation is emitted

6. Corona: The outermost layer of the sun's atmosphere, extending several million kilometers into space.

temperature is about 1-2 million °C.

through radiation.

3. convective zone: outer layer where energy is transferred through convection currents, causing sunspots and solar activity.

4. Photosphere: visible surface of the sun with a temperature of around 5500°.

5. chromosphere: layer above the photosphere, visible during solar eclipses, with a temperature increase.

6. Corona: outermost layer extending millions of kilometers into space, with temperatures around 2 million °.

c. What is ceramic material? Is it possible that ceramics can be recycled?

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Ceramic material is a hard, non-metallic, inorganic material created by heating clay or other inorganic materials to high temperatures, typically above 1000°C. Ceramic are commonly used in tableware, sanitary ware, building materials etc.

As for recycling, ceramics can be challenging to recycle due to hardness and brittleness. However, some ceramic materials can be recycled in certain ways:

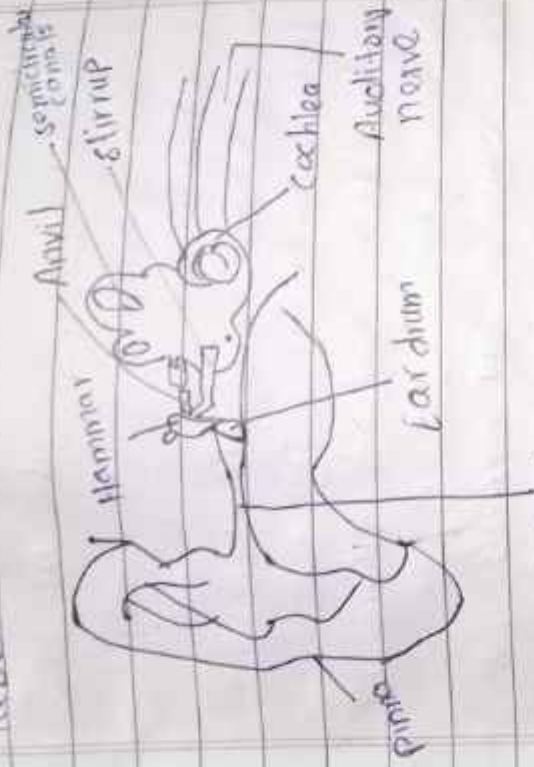
1. Crushing and reusing as aggregate in construction.
2. Refiring and reusing in Pottery and brickmaking.
3. Recycling of ceramic wastes into new products like concrete or cement.

DATE: _____
DAY: _____
DRAW A STRUCTURE LABEL 17



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2. Middle
a) Ear
sand

DATE _____ DAY _____
d. Draw and explain the structure of ear. Also label its parts.



The structure of ear consists of three main parts

1. Outer ear:

(a) Pinna: Collects sound waves.

(b) Ear canal: Direct sound waves to eardrum.

2. Middle ear:

(a) Eardrum: Vibrates from sound waves.

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six pictures in the middle
of the page

3 ways are
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making. AI system can analyze data, identify patterns and adapt to new information while AI has made tremendous progress, outsmart humans is still a topic of ongoing debate. AI can explain in specific domains, such as chess or image recognition but human intelligence encompasses a broader range of cognitive abilities, creativity, and critical thinking. currently, AI is designed to augment human capabilities, not replace them.

b. Define rocks formation, rock cycle, and different types of rocks.

Rocks formation:

The process of forming and rocks from the cooling and

Solidification of magma or lava or the cementation and compression of sediments.

Rock cycle:

The continuous process by which rocks are formed, transformed and destroyed, involving the three main types of rocks: igneous, sedimentary and metamorphic.

Types of Rocks:

(i) Sedimentary rocks:

Formed from the cementation and compression of sediments. For example sandstone, limestone, shale.

(ii) Igneous rocks:

Formed from the cooling and solidification of magma or lava e.g. granite, Basalt etc.

(iii) Metamorphic rocks:

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Quartzite

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ii) Disacch

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of existing rocks under high pressure and temperature. For example. Marble, slate, Quartzite.

c. Explain carbohydrate and its types.

Carbohydrates are biomolecules that serve as the primary source of energy for living organisms. They are composed of carbon, oxygen and hydrogen atoms with the general formula $(C_6H_{12}O_6)_n$.

There are three main types of carbohydrate.

(i) Monosaccharides

Monosaccharides are carbohydrate with simple sugar. For example glucose, fructose, galactose.

(ii) Disaccharides:

Disaccharides are carbohydrates

with double sugars for example sucrose, lactose, maltose.

(vii) Polysaccharides:

Polysaccharides are complex carbohydrates. For example, starch, cellulose, glycogen. Carbohydrates play vital role in energy production, cellular structure and nutrient transport in living organisms.

d. what are the benefits of a balanced diet?

A balanced diet provides numerous benefits including

- (i) optimal health that is essential nutrients support overall health and well being.
- (ii) it provides energy, an adequate fuel for bodily functions and physical activity.
- (iii) weight management to support

DATE: _____
healthy weight, strong immune.

help and protect against illnesses and injuries. Healthy skin, hair, and nails. Promotes skin, strong hair, and nails.

support growth and development. crucial for children and development.

26: (a)

Total Percentage increase

Percentage increase

so the population increase by 2.5%

healthy weight gain or loss.
strong immune system to
help and protect against
illnesses and infections.

Healthy skin, hair and nails,
nutrients promote radiant
skin, strong hair and healthy
nails.

support growth and development,
crucial for children's growth
and development.

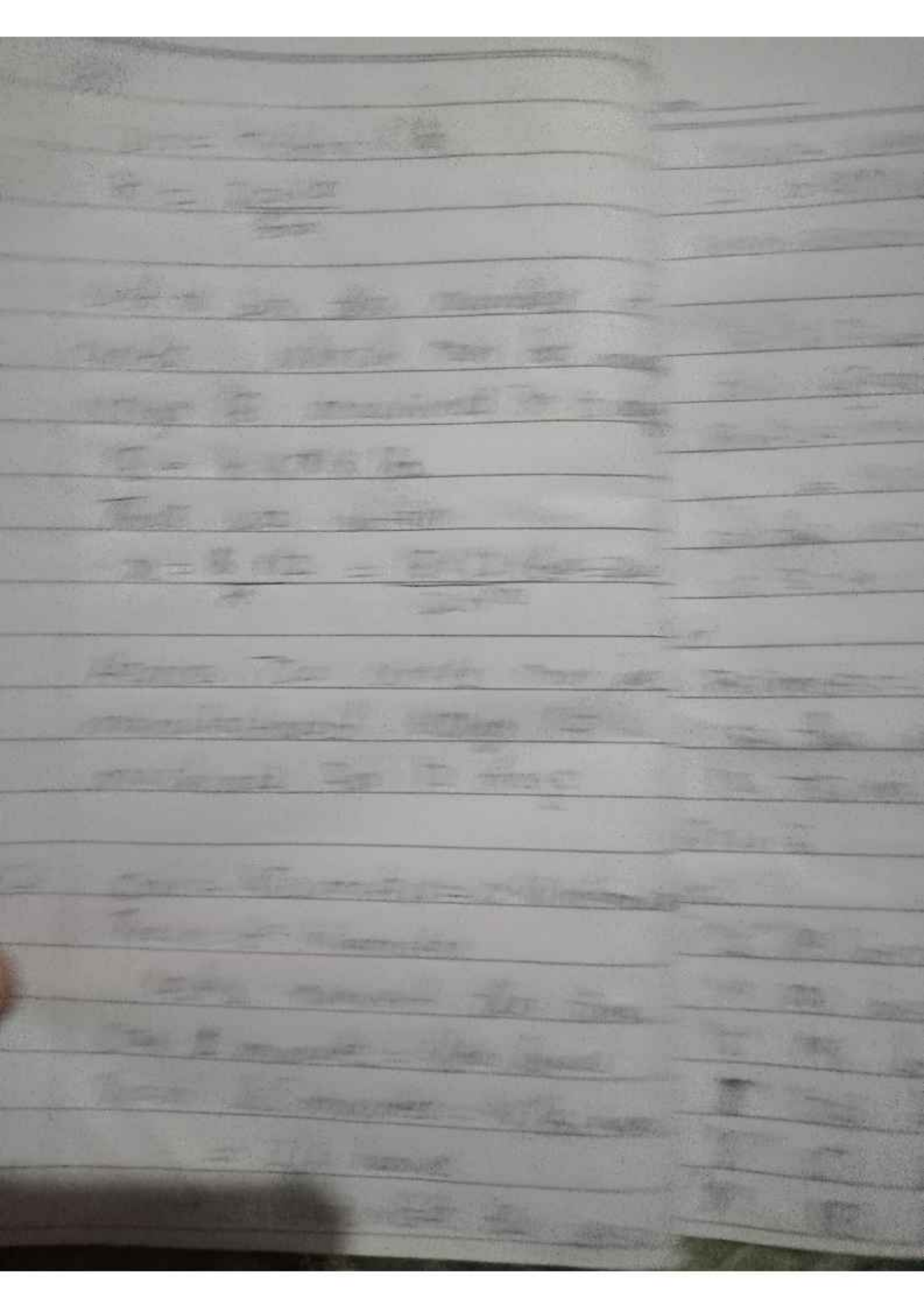
Q6: (a)

$$\text{Total Percentage increase} = \frac{22500 - 18000}{18000} \times 100\%$$

$$= 25\%$$

$$\text{Percentage increase per year} = \frac{25\%}{10} = 2.5\% \text{ per year}$$

so the population of the village
increase by 2.5% every year.



$$\text{Car speed} = \text{Distance} / \text{Time}$$

$$= 0.45 \text{ km} / (1/60) \text{ hours} = 27 \text{ km/h}$$

$$\text{Train speed} = \text{Distance} / \text{Time} = 69 \text{ km}$$

$$(3/4) \text{ hours} = 92 \text{ km/h}$$

Let's find the ratio of their speed.

$$\text{Ratio} = \text{Train speed} / \text{Car speed}$$

$$= 92 \text{ km/h} / 27 \text{ km/h} = 3.4$$

so the ratio of their speed is 3:4:1 or 3:4 times faster.

(d)

$$\text{Perimeter} = 5 \times 15 \text{ cm} = 75 \text{ cm}$$

so the perimeter of pentagon

is 75 cm.

Q No: 8

(a)

"S" (19) becomes "U" (23)

"I" (9) becomes "L" (12)

"S" (19) becomes "W" (23)

"T" (20) becomes "S" (19)

"E" (5) becomes "H" (8)

"R" (18) becomes "A" (1)