**Using the knowledge of chemistry;**

1. **Explain the;**
2. Categories of the material

**Use acronym;**

CRE

Examples of each category of the materials✓✓

Reason for each category of the material✓✓

Categories of the material✓✓ 3scores; give all the 2 categories,

Atleast 2 examples in eachcase

1. Suitability of the material

PE

Explanation of the property( impact of the property) ✓

Property of the chosen material✓ 3scores; give like four properties

1. Advise on the choice of the material

UIM

Mitigation of the impact✓

Impact of the material on the environment✓ 3scores

Use of the preferred material✓

**Look at this;**

Examples ;

Application of the materials ; 1. construction of;

* A dam
* Swimming pool
* Living room/dormitory/storage building
* Church/mosuque/cinema hall

Nb ;with the above, iron bars ,cement,blocks can’t miss

* Bombardier air craft body .ie.

Aluminium is prefered

Response;

1. Category of the materails;

materials are either synthetic***✓***; which are made by man***✓***/artificial such as iron (bars and sheets),cement,glass,plastics(PVC )for construction OR are natural***✓*** ;which are formed without influence of man/God made***✓*** like wood ,sand***✓***

Category***✓***

Reason***✓***

Example***✓***

1. Suitability of the material;

**Iron(bars and sheets); -**

Very strong***✓*** and can can support heavy load***✓***

- has high tensile strength***✓*** and can resist***✓***

- its ductile and malleable hence easy to mould.

- has high melting point hence can resists fires;

- Galvanised iron resists rusting.

- steel has improved properties, making it suitable for many users.

property***✓***

explanation***✓***

**Aluminium; ( NB. This material can also be used to construct bombardier aircraft body)**

- low density***✓*** hence can be used on top of buildings***✓***.

- strong***✓***, not easy to break / durable. ***✓***

- has high melting points***✓*** to resists fires***✓***.

- has bright appearance ***✓***hence can be used for doors, roofing, window frames***✓***.

- high electrical/ heat conductivity hence can used to make inside materials like making utensils.

property***✓***

explanation***✓***

**Mortar;** Composite made of cement, sand and water,

- Hard***✓*** so hence can resist deformation and can easily form floors***✓*** and pillars

-It is adhesive***✓*** so can join bricks to create the building***✓***

-Cushioning to spread the vertical load

**Glass;**

- Ordinary glass is transparent***✓*** so good for windows to see through***✓***.

- tinted glass allows***✓*** light to pass through it in only one direction so good ***✓***for windows (visual security.)

- Double-glazed glass (tampered glass) is strong, resistant to fire attack and it is not brittle

. - Glass is reflective***✓***, attractive and it adds value when put in doors and windows***✓***.

property***✓***

explanation***✓***

**Paint;**

This is a liquid composite made of pigment, resin, solvent and additives.

- Weather guard resists bad weather***✓*** (water proof) and hence good for outside walls***✓***.

- Silk vinyl paint does not burn***✓***, so good for interior purposes***✓***.

- Paint can be insect repelling***✓***, light sensitive to beautify***✓***, protect walls.

property***✓***

explanation***✓***

**Plastics; -**

These are man-made polymers which can undergo permanent deformation without breaking when subjected to a strong force. E.g. PVC, Polyethene, Nylon, Polyesters.

- They are flexible ***✓***so can be bent easily***✓***.

- They are water proof ***✓***so a good for Plumbing and roofing***✓***.

- They are light and strong***✓***, so good for shuttering purposes***✓***.

- They have low melting points***✓*** so can be attacked by fires easily. ***✓***

property***✓***

explanation***✓***

**Clay and Ceramics;**

- They are brittle***✓*** so break easily***✓***.

- They are water proof***✓*** so good for flooring***✓***.

- They are good looking***✓***, so nice for Finishing purpose***✓*** like floors, walls.

- They cannot be attacked***✓*** by chemicals.

property***✓***

explanation***✓***

**Bricks and blocks:**

- Resistant to fire***✓*** so good for wall construction***✓***.

- They are strong***✓***, so can support heavy loads***✓***

property***✓***

explanation***✓***

1. Advise on the choice of the materials

Iron is used for making shutters for doors***✓***, windows.,Making frames for doors windows and Reinforcing concrete . Iron depletes soil fertility when it accumulates***✓*** hence degrading the soil ;this can be mitigated by recycling iron***✓***,re -using iron.

-iron is non biodegradable***✓*** hence pollutes the environment ;this can be mitigated by recycling iron***✓***,re -using iron.

(b) Aluminium is used for making shutters for doors***✓***, and windows,Making frames for doors and windows, Reinforcing concrete, Making roofing materials (struts and ties), electrical installations .it depletes soil fertility***✓*** when it accumulates hence degrading the soil ;this can be mitigated by recycling aluminium,re -using aluminium***✓***.

Use***✓***

Impact on the environment***✓***

mitigation***✓***

(c) Plastics are used for making pipes***✓*** (water pipes) for plumbing, door and window stutters.plastics are non biodegradable***✓*** hence pollutes the environment ;this can be mitigated by recycling plastics***✓***,re-using them

Use***✓***

Impact on the environment***✓***

mitigation***✓***

2.Textile .ie. making of;

* Sweaters
* Tents Nb;
* Ropes nylon is
* Seat belts preferred
* Shirts
* Fishing nets
* Mosquito nets
* Rain caots
* Threads
* Jackets etc

Response;

1. Category of the material;

materials are either synthetic***✓***;which are made by man/artificial***✓*** such as nylon,polyster ***✓***for textile OR are natural***✓*** ;which are formed without influence of man***✓***/God made like silk,cotton,wool,bark cloth***✓***

b) suitability of the material;

nylon as a material for textile has the following properties;

Water proof***✓*** hence nylon textiles are ideal for raining conditions***✓***

Very strong***✓*** hence resistant to wear***✓*** ,tear and destruction by insects

Fairly elastic***✓*** hence can be stretched to accomadate different sizes***✓***

Light***✓*** hence its textiles are convenient for wear***✓***

Can easily be dried ***✓***hence an ideal material for rainy days***✓***

Can resist heat ***✓***more than many other textile materials***✓***

property***✓***

explanation***✓***

C) advise on the choice of the material;

Nylon can be used to make clothings***✓*** like sweaters,shirts,raincoats, seat belts, fishing nets,ropes,tents,threads etc

Nylon has some side effects like;

Being non biodegradable***✓*** hence reduces soil fertility by lowering water flow***✓***;can be mitigated by recycling***✓*** of used nylon materials to reduce on the amount in environment

Being water proof***✓*** hence it blocks flow of water in water systems; can be mitigated by recycling of used nylon materials to reduce***✓*** on the amount in environment

When burnt,it produces toxic gases ***✓***which pollute air; can be mitigated by recycling***✓*** of used nylon materials to reduce on the amount in environment

Use***✓***

Impact on the environment***✓***

mitigation***✓***

reference;

check ASSHU,UTEC,UNEB SAMPLE,JJEB,TEA,KAMSSA,ACEITEKAetc

**Wait for;**

* **reactivity series-alloys**
* **using materials**
* **periodic table**
* **trends in the periodic table**
* **formulae,mole concept and stiochiometry**
* **element,compond,mixtures**
* **structure and bonding**
* **carbon in life .ie. biogas,polymer,plastics**
* **air .ie. rusting and combustion**

Thank you

TR TAIKA ERIZEPHAN

0704499997

TR ETYANG JOHN

0708168051