Dos and Don'ts for Generaral Science & Ability Paper

Hi there, you've done well. Know that acquiring knowledge is one thing and reproducing it in paper acccording to what's asked is another. There are a few things I would like to highlight.

1. A 5 marks part requires 2 sides(not more than that) of a paper. Know that there can be two or three parts of a question and their marks are divided accordingly. So, address all of them in a just manner.

2. Focus on time management. You get 35 minutes to solve one question and about 8 minutes per 5 mark part. Manage your time accordingly.

3. You need to understand that your paper is supposed to look more scientific than theoretical. So, add flowcharts and diagrams where required.

4. Your handwriting and neatness can be really impactful. Avoid cutting and overwriting.

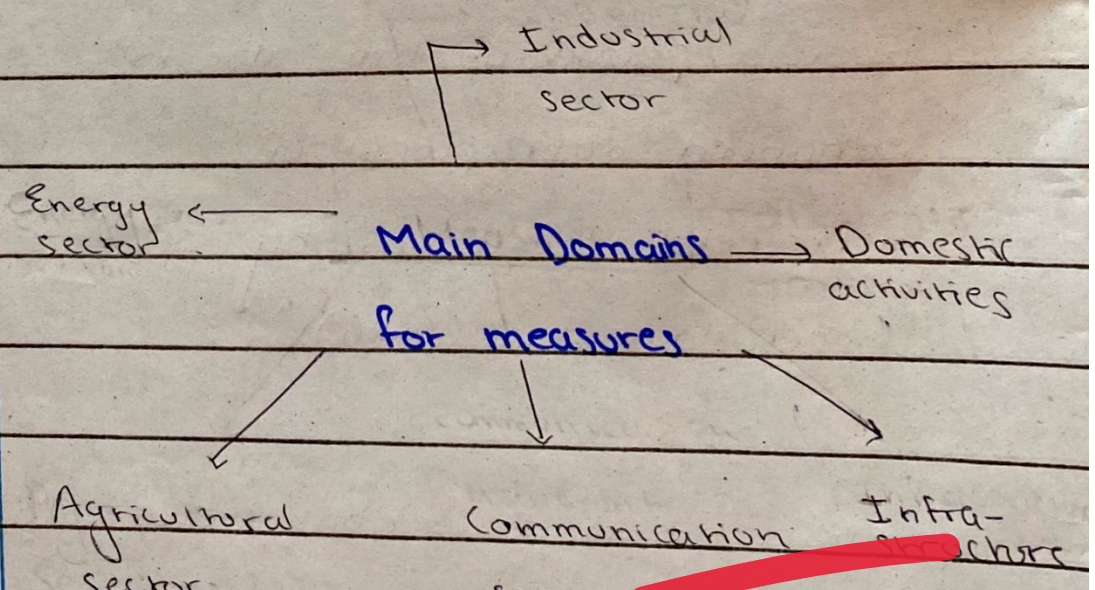
5.Focus on your spellings and your grammar. Here, in GSA there's no deduction in marks but your expression will definitely create an impact.

6. In ability portion, give explanation for analytical ability question in words. You need to understand that a 5 mark part requires all steps written and explained.

Good luck for CSS 2025. You're gonna rock in sha Allah. :)

MEASURES TO BE TAKEN IN COP24 TO COUNTER GLOBAL WARMING :-

The episode of global warming is hitting the developed developing and least developed countries the most. Despite less contribution in emission of CO_2, an accelerated affect is faced by developing countries To counter this affect, several measures can be adopted in COP24



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1. **Renewable Energy sector:**

Main shift towards renewable energy sector should be done to decrease emission of CO_2 and other GHGs in fossil fuel burning.

Example:

Hydropower, solar energy, wind power,

2. **Agricultural sector transformation:**

Agricultural activities including cultivation of certain crops releases CH_4. Such activities should be replaced by climate friendly agricultural policies.

Example:

Climate resilient seeds, and climate friendly cash crops should be cultivated.

③ Communication sector transformation:

Combustion of fossil fuel in cars releases a huge amount of CO_2 in atmosphere. To encounter this climate friendly communication should be adopted.

Example:

(i) Electric vehicles should be used to overcome combustion of fossil fuels

(ii) Catalytic converters should be used in cars to decrease NO_2 emission in atmosphere.

④ Climate resilient infrastructure:

Urbanisation should be planned in such a way that climate change related disasters are kept in mind

Example:

(i) Buildings resilient to climate disaster.

(ii) Plantation to decrease CO_2 in atmosphere

(5) **Environment friendly domestic activities:**

Domestic activities should include the "3R strategy"; recycle, reuse and reduce consumption.

Example:

(i) Domestic waste segregated into recycling and non recycling parts.

(ii) Products should be reused and consumption should be reduced.

(6) **Industrial sector:**

Production in industrial sector is also one of main production and emission of CO_2 into atmosphere. Combustion of fossil fuels in industrial sector should be decreased.

Example:

(i) Decrease production of products which involves an increase amount of fossil fuel production.

(ii) Carbon trading (emission) with other countries to balance out total carbon emission.

Above sectors of the developing countries can be transformed by the ~~party~~ policy adoption and fund mobilisation at COP 29. This will assist the developing countries to counter the phenomena of global warming affecting the least Developed Countries the most

PART (B):

CIRCULATORY SYSTEM OF BODY:

Circulatory system of body can be defined as,

" Close net

capillaries, veins and organs involved in circulation of blood throughout the body for proper functioning."

Artries veins and capillaries constitute a major portion of the circulatory system of the body, involved in transportation of blood and fluids.

FUNCTIONS OF ARTRIES, VEINS AND CAPILLARIES:-

① Function of artries:-

Artries are thick layered vessels which are involved in :-

(i) Transportation of oxygenated blood from the heart towards organ.

(ii) Exception of pulmonary artery which transport deoxygenated blood from heart towards lung for oxygenation.

(2) **Function of veins:**

Veins are thick layered vessels which includes valves and are involved in:

(i) Transportation of de-oxygenated blood from organs to heart for oxygenation.

(ii) Veins carry blood away from organs including toxins and waste products.

(iii) Pulmonary [illegible] supplying oxygenated blood towards heart.

(3) **Function of capillaries:**

Capillaries are a single layered, thin vessels in close proximity with organs

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involved in:-

(i) Exchange of nutrients between the vessels and organs.

(ii) Exchange of gaseous material and fluids between vessels and organs.

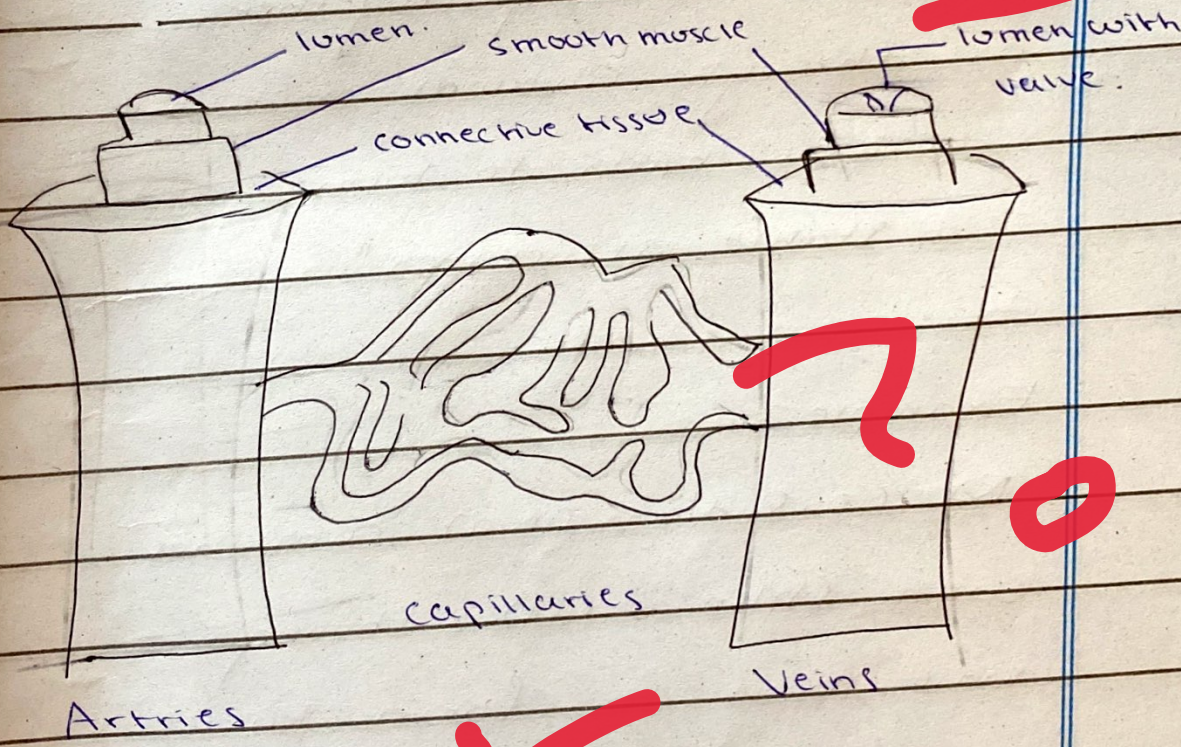


fig:- Artries, capillaries veins.

PART(C):-

CHEMICAL BONDING IN ATOMS:-

Chemical bonding in atoms can be defined as,

"Atoms combing together through covalent or ionic bonds to form stable structures."

Example:-

Sodium (Na) combines with Chlorine (Cl) through ionic bond to form lattice of NaCl.

REASON OF CHEMICAL BONDING IN ATOMS:-

Atoms form

due to following reason:

(i) To fulfil the valence shell octet rule to gain stability. Complete set of electrons in outermost shell through sharing (covalent) bond or transfer (ionic) bond stables an atom.

(ii) To form stable structure of molecules.

Example:

Carbon in its outershell possesses 4 electron and share each electron with 4 hydron to complete 8 electrons in its valence shell.

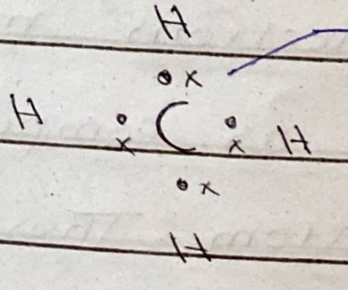


fig: CH_4 cove

STRUCTURE OF WATER:-

Structure of water molecules has following characteristics:-

(i) Type of bond between atoms:-

"Polar covalent" bond present between 1 Oxygen and 2 Hydrogen molecules. 6 outermost electrons are present in oxygen atom which through sharing of 1 electron of 2 hydrogen atoms completes octet rule

(ii) Presence of charge on atom:-

Due to high electronegativity of oxygen atom, it is able to attract electrons more towards itself as compared to hydrogen atom. Thus oxygen atom acquires "partial

negative charge" (−δ) and hydrogen atom acquires "partial positive charge" (+δ)

(iii) Shape of water molecule:

It is "bent shaped" due to repulsion of outermost electron in oxygen atom.

(iv) Bond between molecules:

Between water molecules "Vander wall forces" are present.

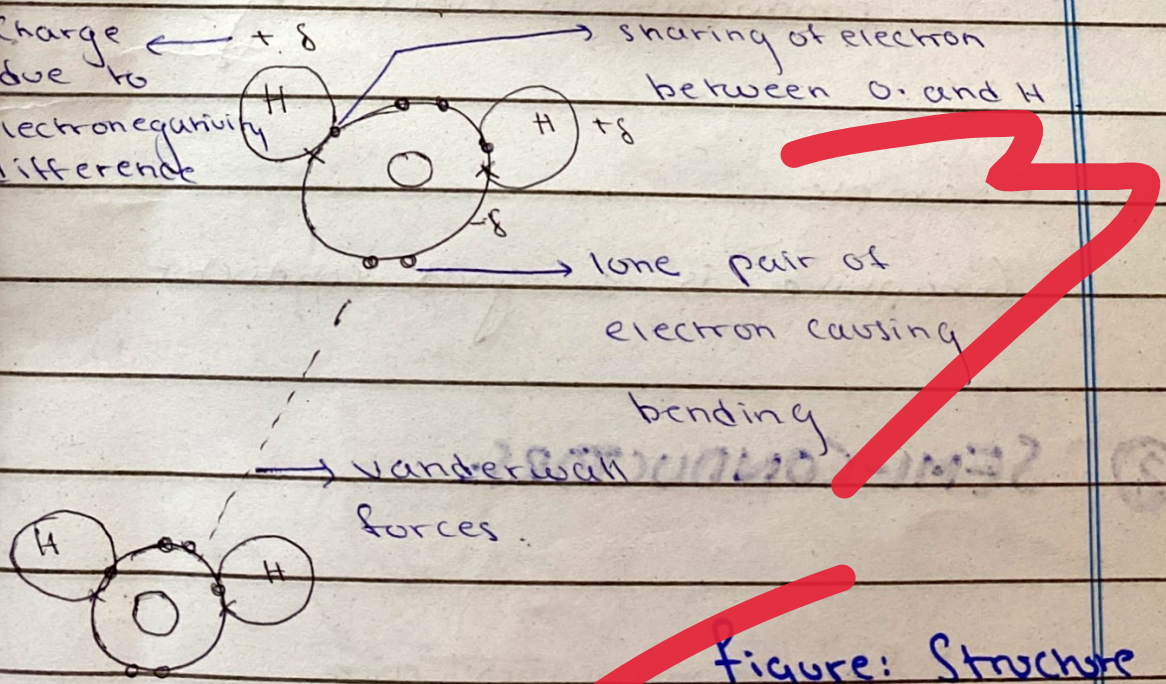


figure: Structure of H_2O molecule

Angular structure??

PART D:

TYPES OF MATERIALS:

There are different types of material based on their composition and structure:

1) CONDUCTORS:

"Conductors are the materials which contain free electron for conduction of electricity."

Example.

Graphite is a good conductor.

2) SEMI-CONDUCTORS:

"Semi conductors are the materials which have conductivity between

conductors (metals) and insulators (ceramics)"

Example:

Semi-conductors

Intrinsic Semi-conductor

Pure form

Germanium, Silicone

Extrinsic Semi-conductor

P type

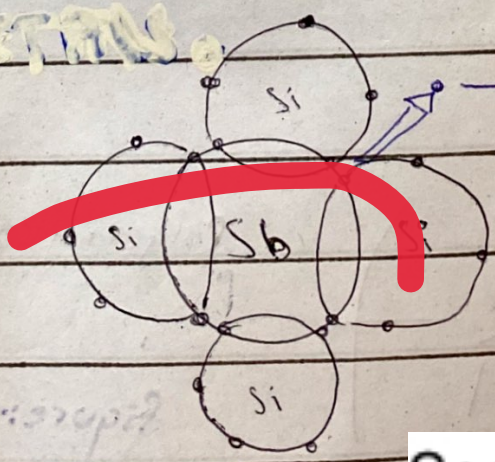
Trivalent impurity

Al, Ga

N type

Pentavalent impurity

P, As



→ Donor impurity contributes free electron.

Figure:

P-Type

③ METALS:-

"Any substance capable of conducting electricity at absolute zero."

Example

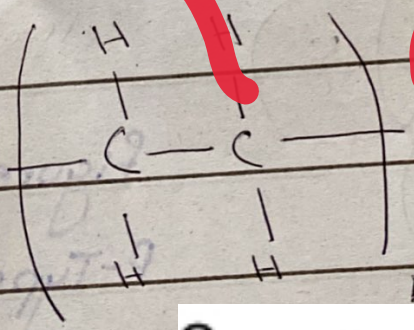
Copper, Aluminium, brass

④ PLASTICS:-

"A chemical structure composed of polymer base chains and side chains."

Example:-

Acrylics, polyesters, Silicones, polyurethanes.



Polyethylene

figure:-

Plastic

(5) CERAMICS:-

"A ceramic is an inorganic non-metallic solid based on oxide, nitride, carbide, shaped and fixed at high temperature".

Example:-

Zirconia, uranium oxide, Silicon carbide

QUESTION NO:03

PART(A):-

REASONS OF DECREASED FOOD QUALITY WITH ADVANCEMENT OF TECHNOLOGY:-

The quality of food is based on the multiple factors and has decreased due to

following reasons:

(1) Decline in nutritional quality of food:

Incorporation of major and essential nutrients in food has declined over time. This has lowered the consumption of balanced diet including carbohydrate, proteins and fats

(2) Addition of food preservatives:

Increased consumption and enhanced efficiency has inclined food industry to use more & large amount to ~~ford~~ food preservatives such as oxidatives, which lowers nutritional value.

(3) Contamination of food:

During large scale production and fast fo

there are more [illegible] contamination of food during process

④ Food adulteration on rise:
Mixing of certain elements in food is also on rise.

⑤ Addition of carbonated drinks in lifestyle:
Carbonated and fizzy drinks are acidic in nature which deteriorates health. has a negative impact on health

7/10
2.5/10

Address both parts of your question

PART (B):

SOLID WASTE MANAGEMENT:

" Solid waste management is the pr

of solid waste material through incineration, burial or compo formation."

PROBLEMS FACED DURING SOLID WASTE MANANGE-MENT:-

1. **Selection of appropriate place for land filling:-**
Appropriate place should be selected for land filling otherwise danger of contamination of nearby water resource or negative affect on soil for cultivation or heat wave conduction from waste material can cause tectonic displacement.

2. **Equipment for incineration:-**
Infectious s should

incinerated. Availability and operation of incinerators is a hurdle as it is an expensive equipment that requires specific skills for operationalisation.

③ **Segregation of solid waste:**

Seggregation of solid waste is an issue. Categorising should be properly done for recycling.

④ **Disposal issues of solid waste:**

Municipal solid wasted disposed of in public waste acts as a source of spread of multiple disease.

Generic!

process technique sensitive.

⑤ **Recycling**

Avoid cutting and overwriting

The whole recycling process is technique sensitive which requires proper awareness and utilisation of recycling equipment.

PART (C):-

DENGUE FEVER:-

(1) Type of disease:-

Viral born disease

(2) Effected organs:-

Spleen is mainly effected

(3) Vector / cause of spread of dengue fever

(i) Due to mosquitoe bite.

(ii) Stagnant water breeding ground for aedis anopheles mosquitoe

(iii) Increase temperature favourable for spread of dengue.

Diagram?

SYMPTOMS OF DENGUE FEVER:-

Symptoms faced during dengue fever includes:

(i) High temperature
(ii) Bleeding from gums
(iii) Bruising
(iv) Low appetite
(v) Malaise
(vi) Dehydration

2 7 8

Write proper symptoms

PART (D):

PLATE TECTONICS IN TSUNAMI:

Write in the form of points
Or at least highlight important points

The role of plate tectonics in Tsunami is as following:

Plate tectonics in mesosphere

↓

Cond... of heat

↓

Slippage of plate tectonics on one and other

↓

Creation of disruption in ocean body

↓

Production of huge waves

↓

Tsunami formation

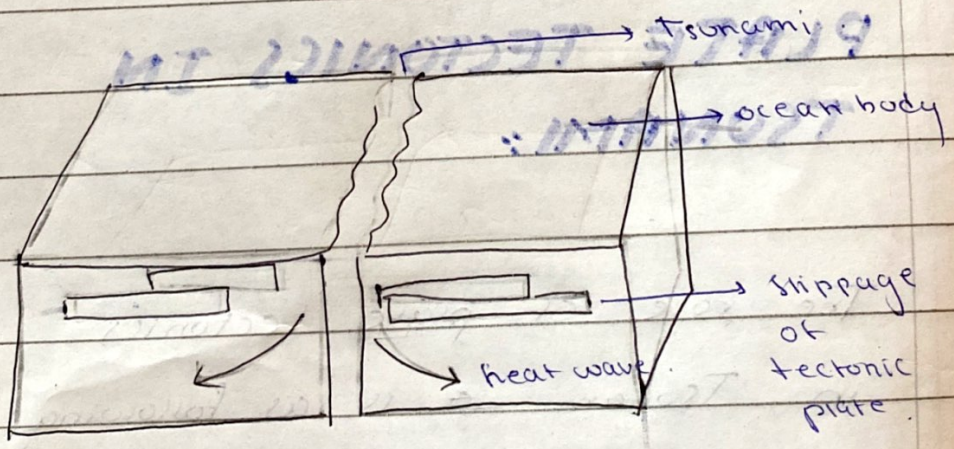


figure: Tectonic Plates in Tsunami.

RICHTER MAGNITUDE SCALE VS VOLCANIC EXPLOSIVITY INDEX:

Richter Magnitude Scale	Volcanic Explosivity Index
Measures intensity of earthquake	• Measure intesity of a volcanic eruption.
• Logarithmic values (0-10)	Logarithmic values from (0-8)
Measuring unit Energy (ergs)	• Volume, height and distance of thrown lava measured

PART-B

QUESTION NO:06

PART (A):

Population at start = 18,000

Population at end of decade = 22,500

Total population increase in decade = 4' (22,500 - 18,000)

= 4500

% Increase = Increase in population / population at start of decade x100%

= 4506 / 1800 x100%

= 25%

Average per year $= \frac{25\%}{10} = 2.5\%$

PART(B)::

9 day production with help of 20 machines $= 600$ units

12 day production with help of 18 machines $= x$

With the equivalence method

$$D_1 \times M_1 \times W_1 = D_2 \times M_2 \times W_2$$

$D_1 = 9$ days

$M_1 = 20$

$W_1 = 600$ units

$D_2 = 12$ days

$M_2 = 18$

$W_2 = x$

Putting values in formula.

$9 \times 20 \times 600 = 12 \times 18 \times x$

$x = \frac{9 \times 20 \times 600}{12 \times 18}$

$= \frac{1 \times 20 \times 600}{12 \times 2}$

$= \frac{10 \times 600}{12}$

$= \frac{10 \times 100}{2}$

$= 500$

Hence they will be able to produce 500 units.

PART(C):

Speed of car = Distance / Time

$= 450/60$ m/sec

$= 15/2 \times 18/5$ km/hr

Distance / Cove

Distance covered by train = 69 km

Time taken = 45 min

= 45/60 hr.

= 3/4 hr.

Therefore, speed of train = $69 \div \frac{3}{4}$ km/hr

$= \frac{69}{1} \times \frac{4}{3}$

= 92 km/hr

Ratio of their speed :

Speed of car : Speed of train

= 27 : 92

PART (D) :

Paragon parameter = 5x length of

sides

= 5 x 15 cm

= 75 cm.

Parameter of pentagon with each side equal of 15 cm is 75 cm.

QUESTION NO:07

PART(A):-

I.Q is Intelligent Quotient is a measure of your ability to reason and solve problem.

Affected by:

(i) Hereditary.

(ii) Environment

(iii) Parenting method.

PART (B):-

Circumference $= 2 \times \pi \times r$

$= 2 \times 3.14 \times 4$

$= 25.13$ cm.

Give steps and formulae

PART (C):-

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

$= 21.4$

Median $= 21$

Mode $= 21$

Add proper formulae

Range $= 20 - 23 / 5$