Dos and Don'ts for Generaral Science & Ability Paper

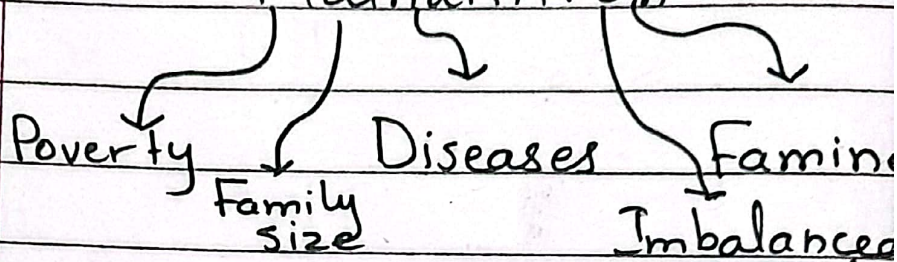
Hi there, you've done well. Know that acquiring knowledge is one thing and reproducing it in paper according to what's asked is another. There are a few things I would like to highlight.

1. A 5 marks part requires at least 2 and at max 3 sides 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. :)

DAY:_____ DATE:_____

•) Causes of Malnutrition



External Causes :-

1) Poverty :- Unavailability or unaffordability of nutritious food like fruits, meat and milk due to inflation, war etc.

2) Family Size :
Large families are unable to provide adequate nutrition to each member.

3) Famine :
Famine such as the Irish potato blight can result in severe food insecurity.

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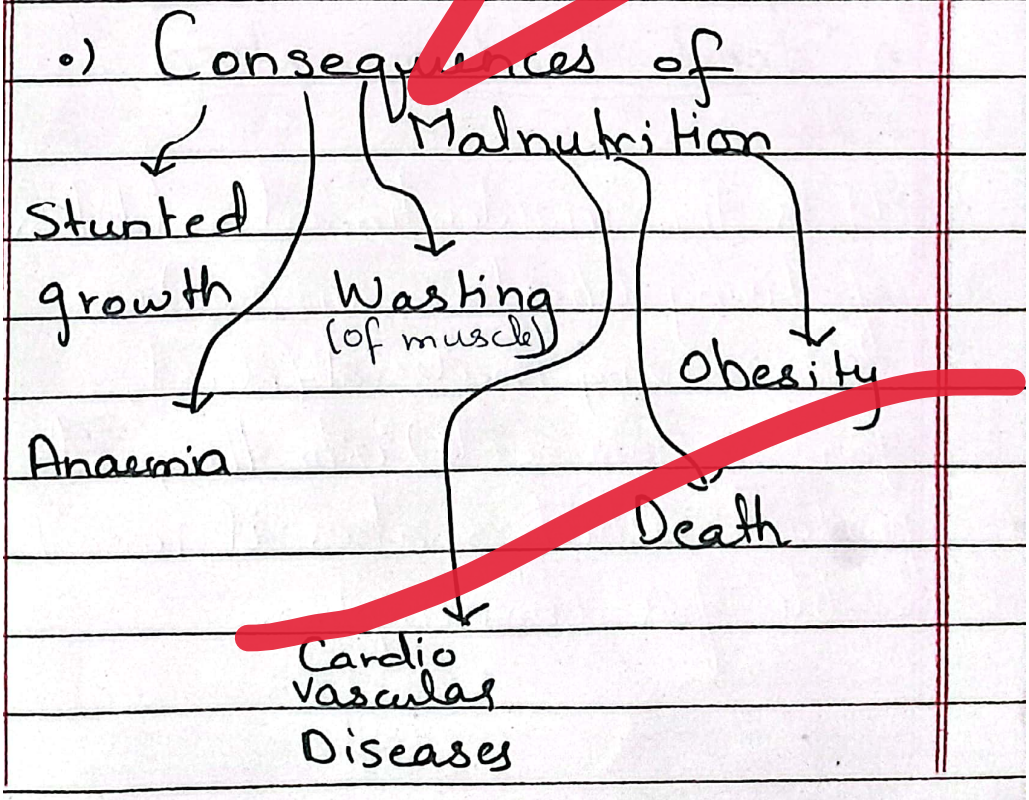
2) Internal Causes:

1) Diseases :-

Crowhn's disease, Cileac disease, thalyssimia can cause severe malnutrition.

2) Imbalanced diet:-

Imbalanced diet due to over-consumption of junk (due to busy work schedule) can lead to nutritional deficiencies



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b)

- **Food Adulteration**

It is the intentional addition of external chemicals or adulterants (colours, flavours, water, sand, flour) to reduce the production cost and maximise the profits.

- **Food Contamination**

It is the unintentional addition of living (bacteria, viruses) or non-living material (dust, food contaminants) into the food product which makes it unsuitable for consumption.

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Food

Adulteration	Contamination
→ Intentional	→ Un-intentional
→ Can be fatal /cannot be fatal	→ Can be fatal /dangerous
→ Example:	→ Example
◦ Addition of water into milk	◦ Lactobacillus growth in milk
◦ Addition of flour (maida) in street fritters to reduce cost of gram flour	◦ Addition of gluten into gluten free food by cross contamination from other utensils
→ Is usually done by the vendor /producer /owner	→ Can happen itself or by anyone (family etc.)

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c) RAM VS ROM

RAM	ROM
(Random Access Memory)	(Read only memory)
◦) Volatile memory	◦) non-volatile
◦) Disappears when device (pc / laptop) loses power	◦) Does not disappears when power is lost
◦) Easier to put / write	◦) Stores instructions & System files
◦) higher capacity	◦) Slower read speed.
Example:	◦) lower capacity
◦) Browser Tabs	Example: Calculators, video games

Buses?
?

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d)

Geo-Stationary Satellites:

A geo-stationary satellite orbits Earth at a specific altitude and rotates in the same direction as Earth making it appear stationary in the sky to observers on the ground.

Altitude: 22,300 miles directly above the equator.

Time taken for One Orbit: 23 hours, 56 minutes, 4 seconds.

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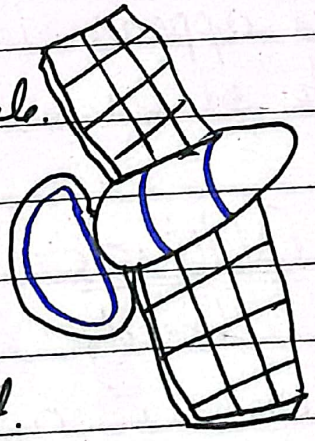
Natural VS Artificial Satellites

Natural :-



- They are man-made.
- Cover lower distance than natural ones / Closer to Earth.
- Are-not permanent. (can be brought down once mission is succesfull).
- Can be controlled.

Example: Change-6 of China.

Proper explanation is required

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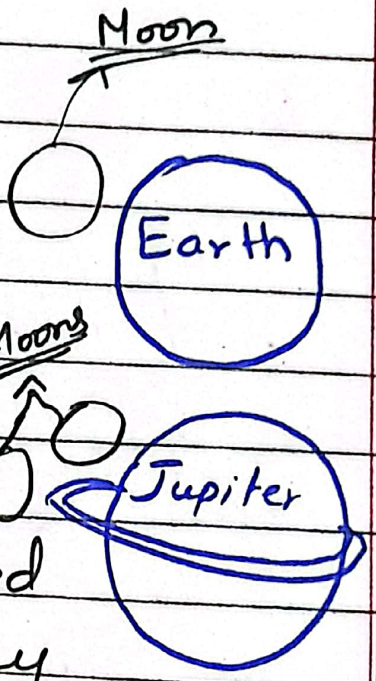
- **Artificial :**

- Natural Celestial Bodies
- Much larger distance from to Earth
- Are permanent
- Cannot be controlled / Are controlled by natural physics laws.

Example: Moon of Earth and moons of Jupiter.



No. Satellites of Jupiter According to NASA:
80-95 Moons.

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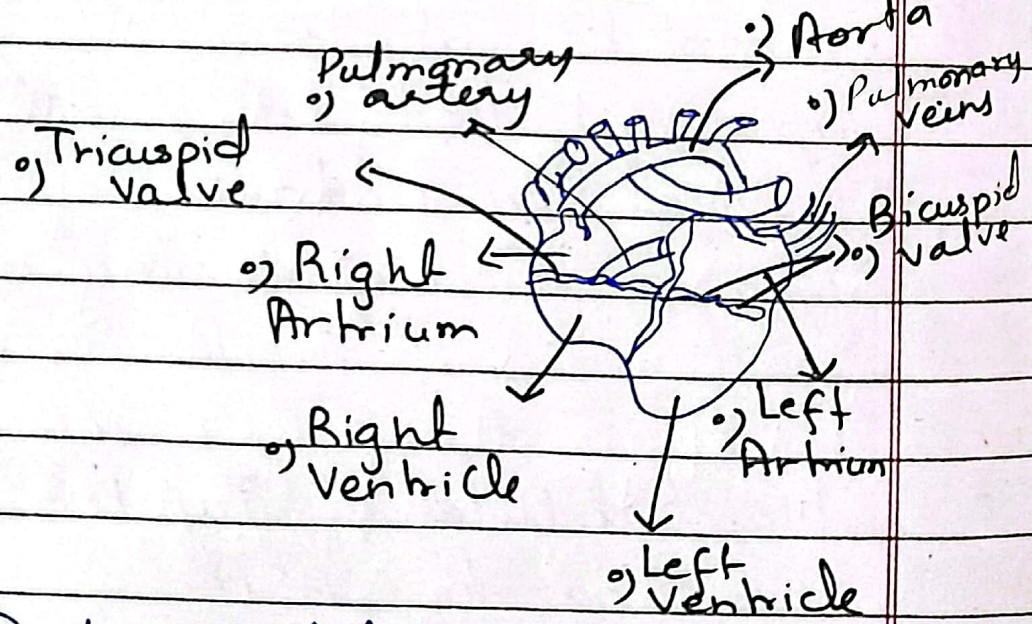
Q 3:

a)

- **Double Circulation:**



Double Circulation is a process whereby the blood passes through the heart twice for de-oxygenation and then returns after being oxygenated from lungs

Process of double circulation

- **Step 1:**
  - Deoxygenated blood enters ~~left~~ right atrium and then right ventricle
- **Step 2:** Blood enters the left pulmonary artery and reaches lungs for oxygenation.
- **Step 3:** Oxygenated blood enters heart again through left pulmonary veins into left atrium and then left ventricle
- **Step 4:** Oxygenated blood is supplied to body via Aorta

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◦) Adaptation of Heart for Double Circulation:

Valves:	Muscles
◦) Valves push blood from atrium to ventricles and ventricles to pulmonary veins/arteries. Examples: Tricuspid valve Mitral Valve.	◦) Muscles (Cardiac) provide the pushing and squeezing force to the atriums and ventricles for Complete empty -ing.

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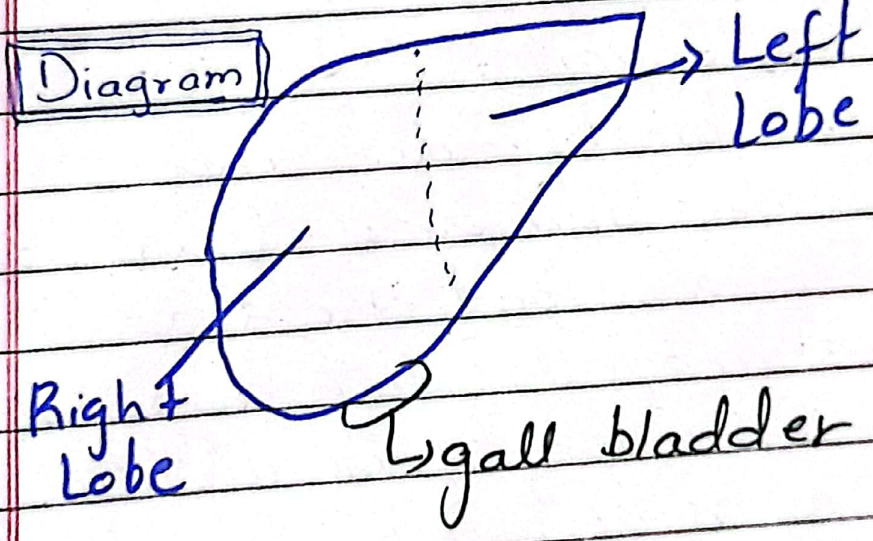
b)

Liver as a Chief Chemist:

Diagram



Chemical Functions of Liver:-

1) Production of Bile:
Liver produces bile salts which are passed down from the

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gall bladder into the small intestine during a meal. Bile helps with emulsification and the subsequent digestion of fats. It also neutralizes the stomach acid so intestinal enzymes can work.

2) Detoxification of Chemicals:

Liver breaks down and detoxifies numerous drugs, chemicals, food colours, additives) and other such compounds. This demonstrates its ability to assess and then choose a suitable mechanism for chemical degradation.

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c)

Green-House Effect

as Blessing:

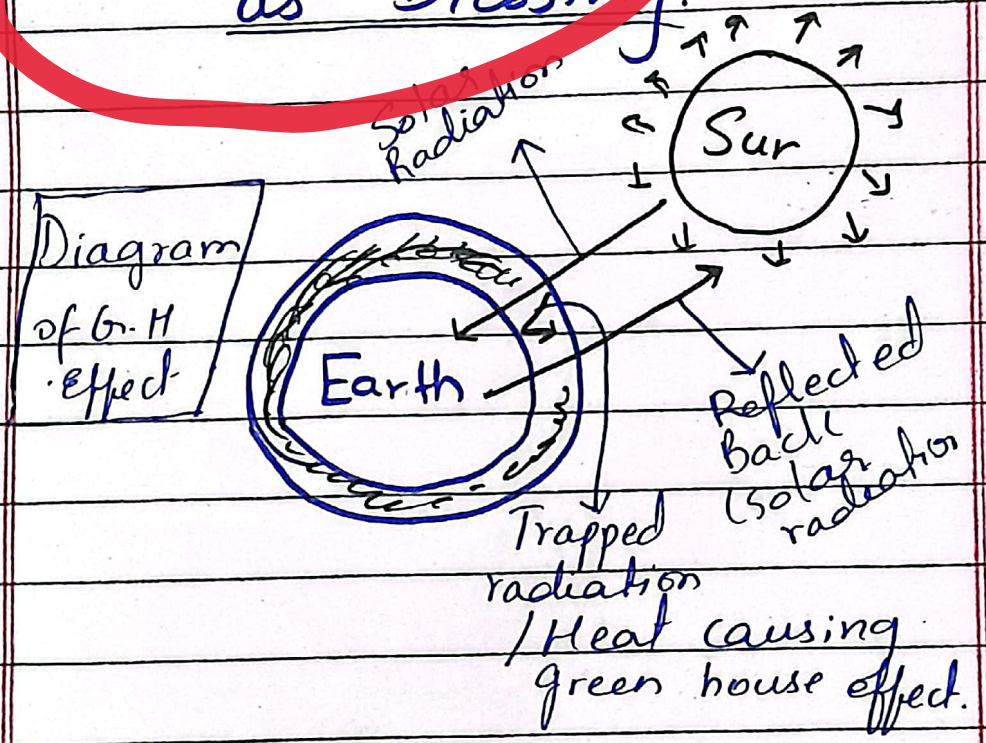

Diagram of G.H effect

- How it is a Blessing:

The trapped heat in the atmosphere causing the Green House effect makes temperatures liveable on Earth. Without it, temperatures would drop to -20 degree causing famine.

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Water Shortage (as water would freeze). Famine would be as a result of lack of agriculture, death of marine life and birds etc.

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1) Enhanced Green-House Effect:

- Increased trapping of heat in atmosphere due to green house gases released mainly from ~~globo~~ industries (CO_2, CO, CFC, CH_4) results in enhanced green house effect.

2) Relation to Global Warming:

Enhanced Green house effect causes global average Earth temperatures to rise to 1.5 or 2°C above normal.

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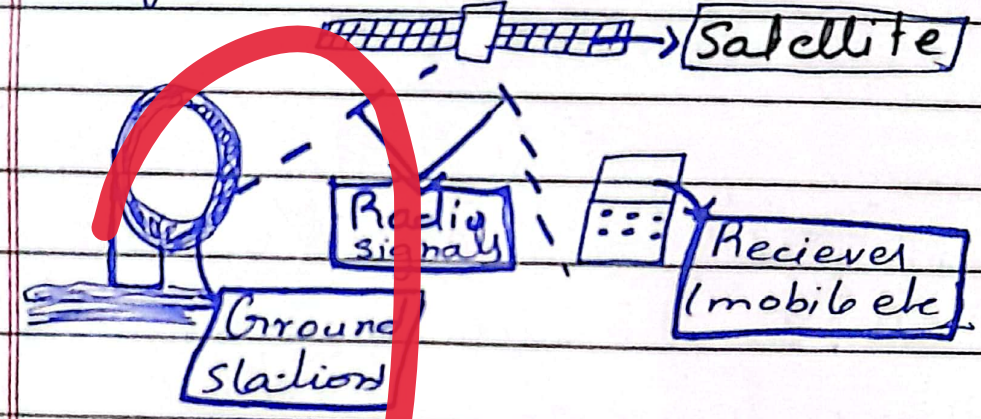
d)

a) Working of GPS:

Global Positioning System

Diagram



Step 1: Radio Signals from Ground Signals recieved by Satellite

Step 2: Satellite measures distance and sends signals to receiver.

Step 3: Receiver gets the position / location.

Explain in words

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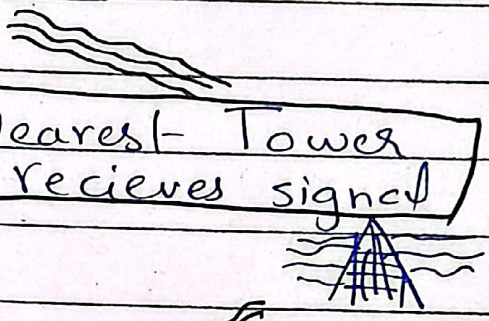
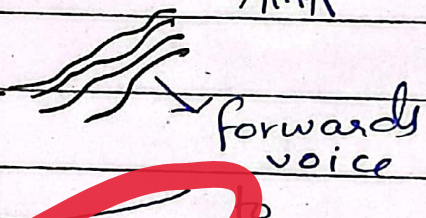
b) Mobile Phone Working:

1) Cellular A calls



2) Nearest- Tower recieves signal



3) Cellular B

forwards voice

*) Process reversed when Cellular B talks so Cellular A can hear the voice.

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Section II

Q#6:

a)

- Enrolment in Jan 2022: 850
- Enrolment in Jan 2023: 1120

Difference: 1120 − 850

= 270 students increased

→ Using Direct Proportion:

100 %	850
x %	270

$x\% = \frac{270 \times 100}{850}$

$x\% = 31.7\%$

% increase : 100 + 31.7 = **131.7%**

DAY: DATE:

b. man's age = x
son's age = y

⇒ Equation 1:

- Two years ago

$x + y = 114$

⇒ Equation 2:

$x = 5y$

⇒ Substitution x in Equation 1 with $x = 5y$ from Equation 2.

$5y + y = 114$

↓

$5y + y = 114$

$6y = 114$

$y = 19$ → 2 years ago.

⇒ Y's present age (+2 years)

$19 + 2 = \boxed{21}$

* Son's age now = $\boxed{21}$

DAY: DATE:

No. of

C). Hens :-

⟹ Let the no. of head hens be : x

Let the no. of cows be = y

⟹ Since hens and cows have only 1 head so their sum will be the total no. of cows and hens (equal to no. of heads)

Total:

$x + y = 48$

⟹ Total no. of feet.

Each hen has 1 head and 2 legs so for every head (x) legs will be $2x$

⟹ Hen = $2x$

Each cow has 4 legs so for each head of cow there are 4 legs.

⟹ Cow = $4y$

Total: $4y + 2x = 140$

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⇒ Finding the no. of Heads:

Equation 1:

(Heads): $x + y = 48$

$y = 48 - x$

Equation 2:

(Feet): $2x + 4y = 140$

⇒ Substitution $y = 48 - x$ from Eq. 1 into 4y of Eq. 2:

$2x + 4(48 - x) = 140$

$2x + 192 - 4x = 140$

$-2x = 140 - 192$

$-2x = -52$

$x = \frac{-52}{-2} = 26$

26
×2
52

$x = 52$ $\boxed{x = 26}$

No. of Hens $= x$

$\boxed{x = 26}$

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d)

o) Average Speed: =

(S1) Speed 1 + Speed 2 (S2)
Total no. of
different speeds (ds)

$\frac{S1 + S2}{ds}$ = avg. speed

$S_1 = 40$ km/h & $S_2 = 60$ km/h

$\frac{40 + 60}{2} = \frac{100}{2} = 50$

Avg. Speed: 50 km/h

Q# 8

b) Water : Milk in 1 : 2
1 : 2

⟹ Quantity of Water in this case by ratio formula:

⟹ ∴ $\frac{\text{part of water / milk}}{\text{Total parts}} \times$ Total Litres

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⟹ | Water | Total parts | T. Litres |
|---|---|---|
| 1 | 1+2 = 3 | 60 |

So: $\frac{1}{3} \times 60 = \frac{60}{3}$

$3 \times 20 = 60$

· So 20 litres of water

⟹ For Milk: (2 parts)

$\frac{2}{3} \times 60 = \frac{120}{3} = 40$

40 litres of Milk

⟹ For the Ratio of 2:1

for Water: Milk:

Add 20 more litres of water as 2 parts equal to 40 litres and 1 part 20 litres:

1 part: 20 litres

⟹ 2 parts: 40 litres

So add 20 litres of Water

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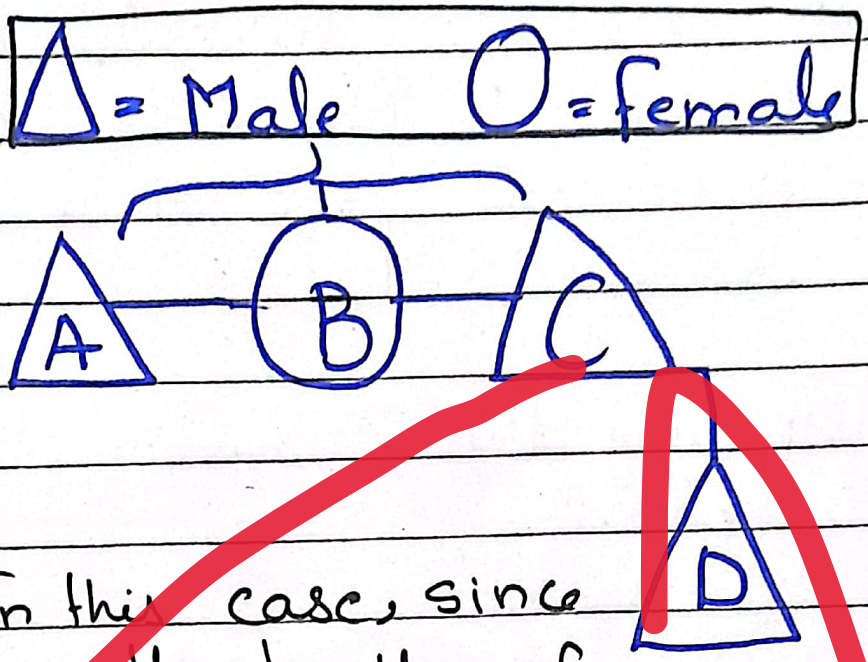
c-



a) In this case, since A is the brother of C and D is a male, So D is Nephew of A.

d- A B C D E F G
H I J K L M N
O P Q R S T U
V W X Y Z.

e) In the case of Roma, each alphabet is added 3 to codify it.

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For example	The first and last alphabets have to be the same
R + 3 = U	
O + 3 = R	
A + 3 = D	
R + 3 = U	

Applying the +3 method to Urdu:

U + 3 = X

R + 3 = U

[redacted] + 4 = G

U + 4 = X

CODE FOR URDU:

XUGX