

Q: No : 03

a Double Circulation

Define here

Ans

Heart is majorly divided into two (2) main parts; left and right. The de-oxygenated blood goes to lungs via left-side of the heart, however, the oxygenated blood from lungs through the right-side of a heart goes to the entire body.

The first circulation of blood takes place in left side of the heart and another circulation of oxygenated blood takes place majorly in the right side of heart where it is pumped to all body. Due to these two significant functions, it is termed a double circulation.

Further more, double circulation will be more expressed and explained in second portion of this answer that how the heart is doing double circulation.

How the heart is adapted to keep flowing in double circulation?

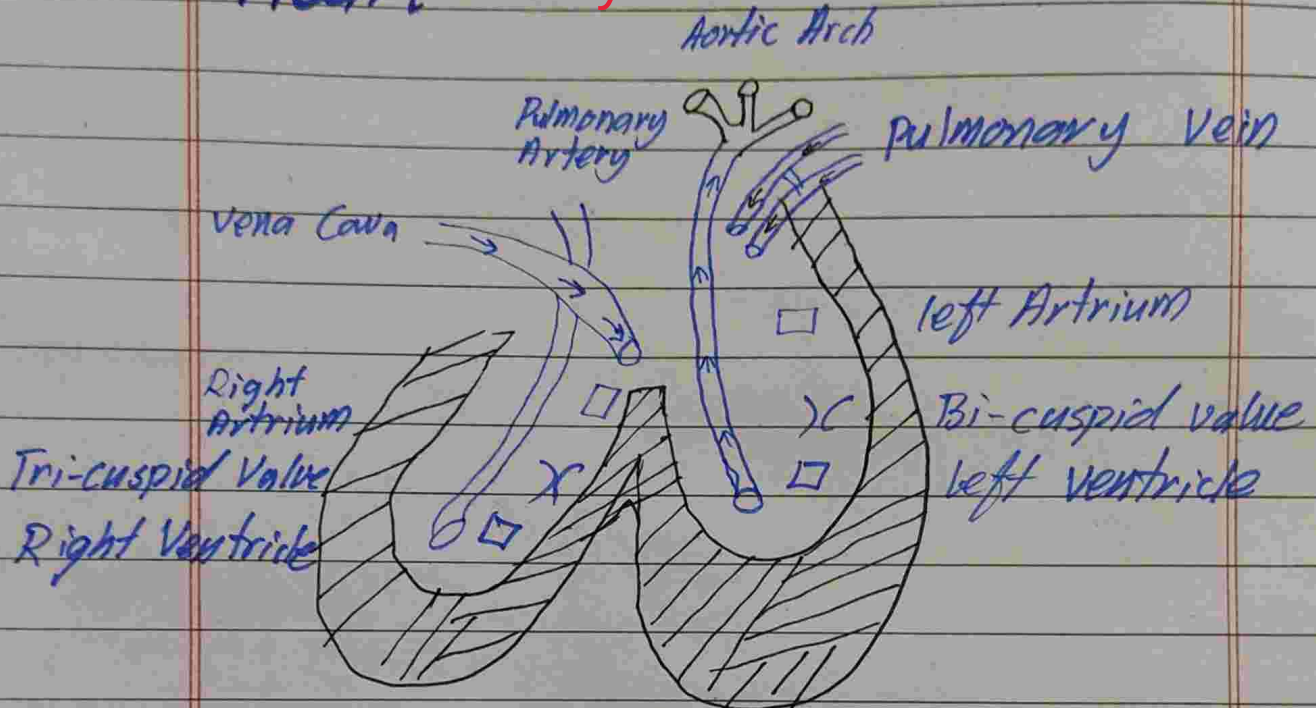
The double circulation

quality of a heart will be understood by knowing the function of it.

Pulmonary circulation

Heart

Systemic circulation



How it works:

A heart is a strong muscular organ which pumps the blood in body. It is source of sending and pumping the blood to the human body.

When the veins carry de-oxygenated blood towards a larger vein called, Vena Cava which pours-in the blood right atrium. Then heart contracts and blood moves forward to right ventricle. In between these chambers, the tri-cuspid valve

prevent the back-flow and blood flows into the right ventricle. Upon the contraction of right ventricle, the blood is pumped through pulmonary valve into pulmonary arteries which takes it to lungs. Here the first circulation gets completed.

Further more, the pulmonary vein carries oxygenated blood toward left atrium. ^{Upon} contraction, ~~of~~ left atrium pours-in the blood toward left ventricle.

The bi-cuspid valve prevents blood ~~from~~ back-flow. Upon contraction, left ventricle pumps it to main artery called Aorta which distribute it ~~into~~ in all body.

Here the 2nd circulation gets completed. The structure of a heart is designed in way that squeezes the de-oxygenated blood in and pumps the oxygenated blood out. It is how the heart is adopted to a double flow circulation in human body.

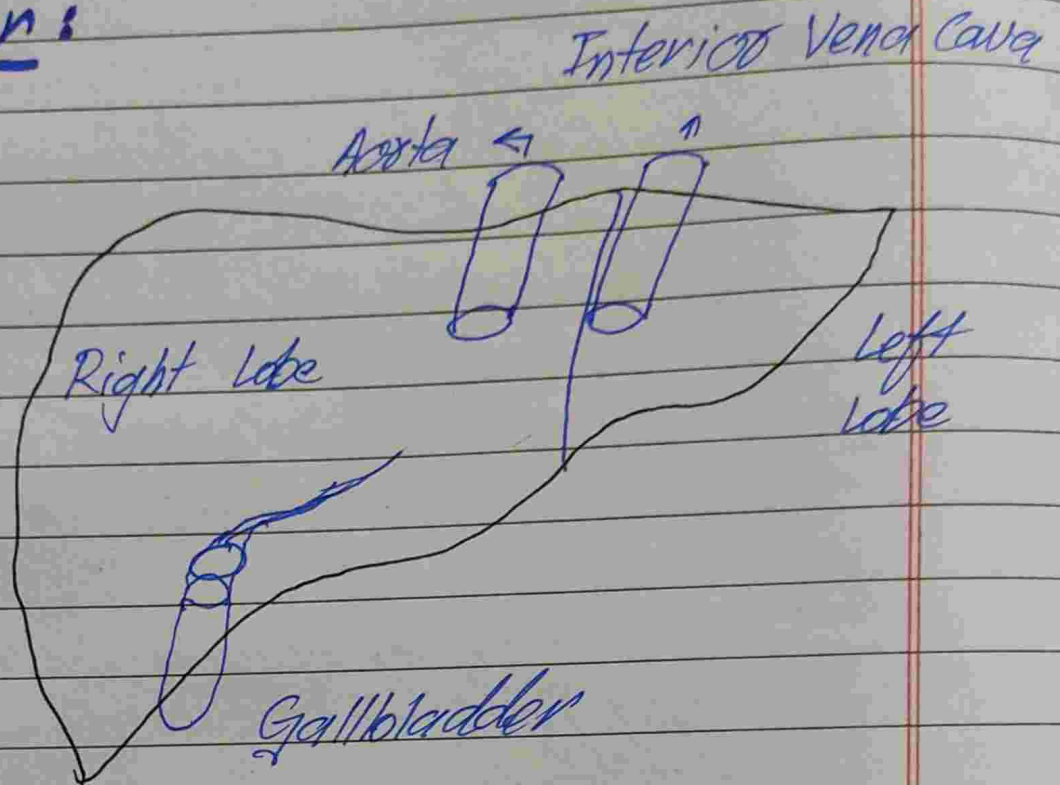
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b Liver as a Chief Chemist.

Liver:



Liver as a Chemist

Liver's functions in human body specially its chief and significant work in digestion by releasing various chemicals which help in digestion. That is why liver is considered as a chief chemist of human body.

Functions of Liver as a Chief Chemist:

1. Metabolic Function:

The liver processes carbohydrates, fats and proteins.

They are released when needed in human body for digestion.

2 Detoxification:

Liver functions as a natural filter. It filters harmful substances. The enzymes reaction convert those harmful substances into less harmful.

3 Bile Production:

It produces bile while helps in making the fats digestable and soluble.

04 Lobules of Liver:

Liver is made up with two major lobe; right and the left. They contain blood vessels, gallbladder, aorta and inferior vena cava.

05 Gallbladder:

It is a storage of bile that helps in fats digestion mainly. It is useful but not essential for survival.



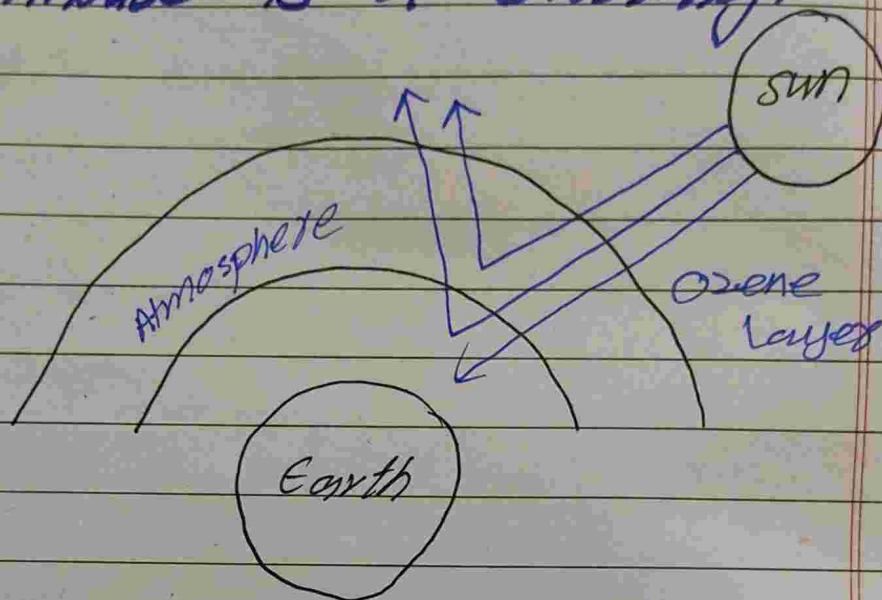
c Greenhouse effect as a Blessing:

Ans Green-house:

Greenhouse is a ~~thermost~~ process through which heat is

trapped in atmosphere under the action of Green House Gases.

Greenhouse is a Blessing:



Ozone layer:

Ozone is a layer in atmosphere which saves the earth from ultraviolet rays. They are harmful which may cause human cancer, skin diseases, etc.

Ozone layer is blessing for us. It stops the ultra-violet rays to earth.

It is blessing for us.

It weak performance because of CO_2 ~~has~~ is the reason which has led to global warming too. In short, it can be said that it is

blessing for us and for the complete earth.

Greenhouse Effect

Greenhouse has the following effects:

i. Environmental effect:

Environmental survival is solely dependent majorly on greenhouse gases' effects.

If ozone layer layer is thick and clean the environment won't be disturbed with direct ultraviolet rays.

ii. Economic effects:

Modern economies are dependent on environment and human being. If people and places are disturbed, how the business and economy will be run.

iii. Social effect:

Its effects are not only bound with environment, but also with societies and changing in them due to its effects.

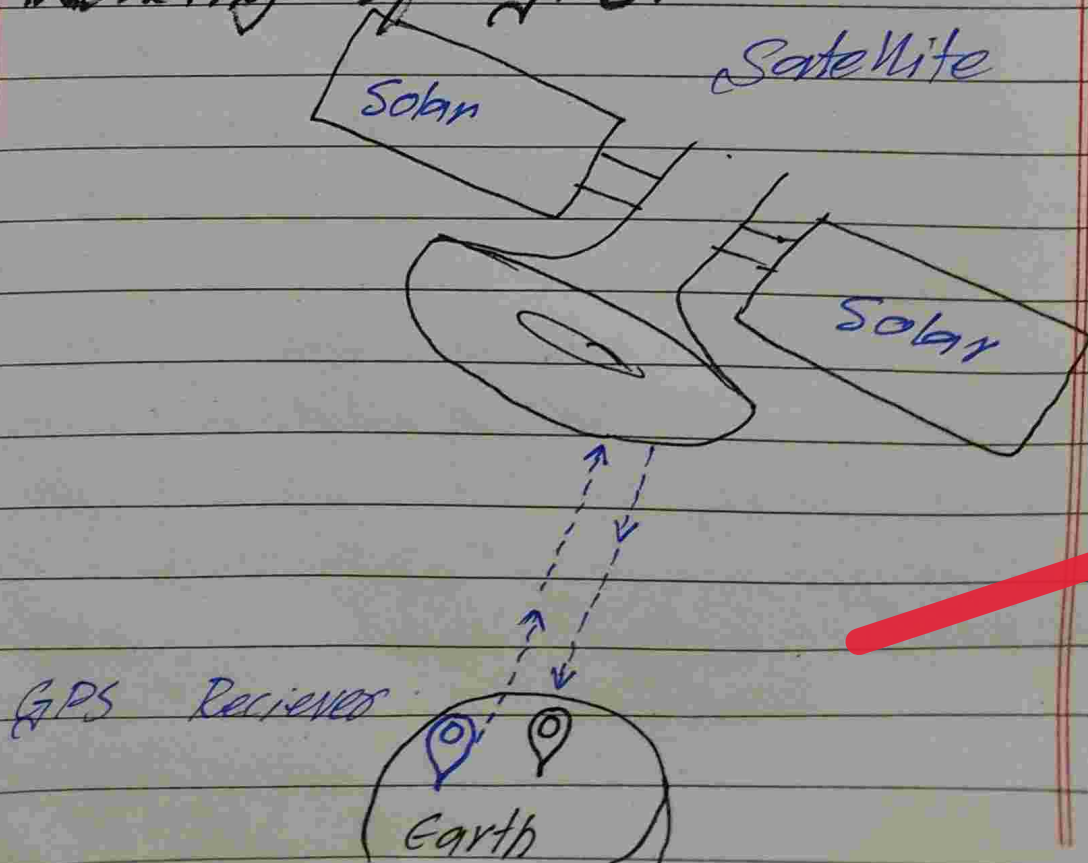
Its Relation to Global Warming:

When the heat directly

goes in to the atmosphere and the ozone layer is depleted, the average temperature will be risen, glaciers will start melting, unseasonal rains will occur, flooding etc. These all changes will happen as they are already being happened now a day. 1.5° degree on average the temperature is high. The last 10 years were the hottest in 175 years according UN.

d

Working of GPS:



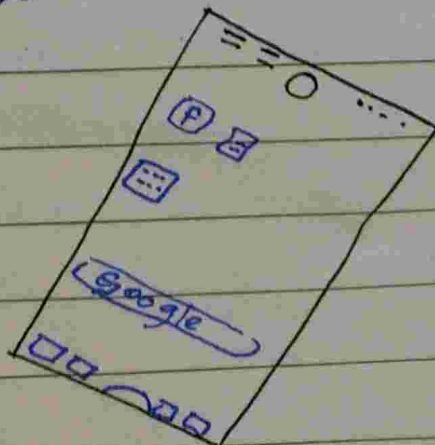
a) Working of GPS:

GPS stands for Global Positioning System which is a satellite based system. It receives and transmits the signals from earth. It also connects other satellite and can receive and transmit the signals in space.

How it works?

It operates 24 hours at of 24 satellites orbiting the earth. As mention above, it receives the signals of one signal sender and sends to another who is the receiver. It can be said that it works like a triangle.

b) Mobile Phone:



It is device which is portable. It is used for calls, using net, studying, doing entertainment and for photography also.

It is a wireless device which connects a user with entire world. They are also called smart-phones because of their multi-functions.

Key Functions:

Mobile phone can be used for texting, sending letters, spreading news, and one also can connect and talk to people who are distant just within seconds.

It also enables one to be entertained and to study from distant areas where one can't physically join the classes. It is a useful and a miraculous device of modern era.

Q: NO: 05

a Radioactivity:

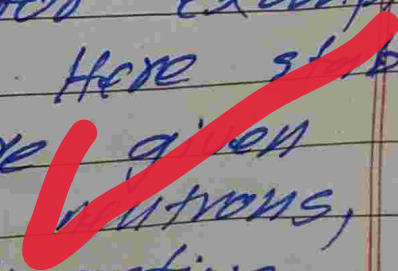
Radioactivity is a process by which unstable atomic nuclei energy in form radiation becomes stable.

There are many types of radioactivity; such as alpha, beta, gamma, etc.

Natural Radioactivity:

Natural radioactivity happens when unstable atomic nuclei break to become more stable. For example; uranium, and thorium. They emit radiation. This is happening naturally.

Artificial Radioactivity:

The name suggests that it is not natural. It happens because of human activities. For example nuclear reaction. Here stable ~~emit~~ elements are  given the particle like neutrons, they become radioactive.

Such type of radioactivity is used in nuclear medicine, therapy and nuclear power generation.

Differences

Natural Radioactivity

- ⇒ Happens naturally; such as the natural environment
- ⇒ Releases energy

Artificial Radioactivity

- ⇒ Occurs artificially; i.e. human beings for their use.
- ⇒ Also releases energy.

6 Step involved in Solid Waste Management:

Solid Waste Management:
Solid Waste Management is a supervised handling of waste from its generation points through the recovery process up to the disposal.

Steps to handle solid waste management:

i Collection Phase:

In this very first phase mostly government or private stakeholders are involved in the collection.

Staff through their vehicles gather at the extent of given boundary. It includes small or big vehicles as per the need of that area. They gather and then take it for further work to the recovery process.

ii Recovery Process:

The waste is being transferred to the station which are in the centre of cities. The waste is right there segregated, recycled and some remaining of use are sold. In recovery process they are separated from a mix bunch of waste.

222 Waste

Disposal:

This is the final stage where the remaining of waste which are of no use, are disposed-off. There are the following ways to dispose-off the waste:

a) Open dumping:

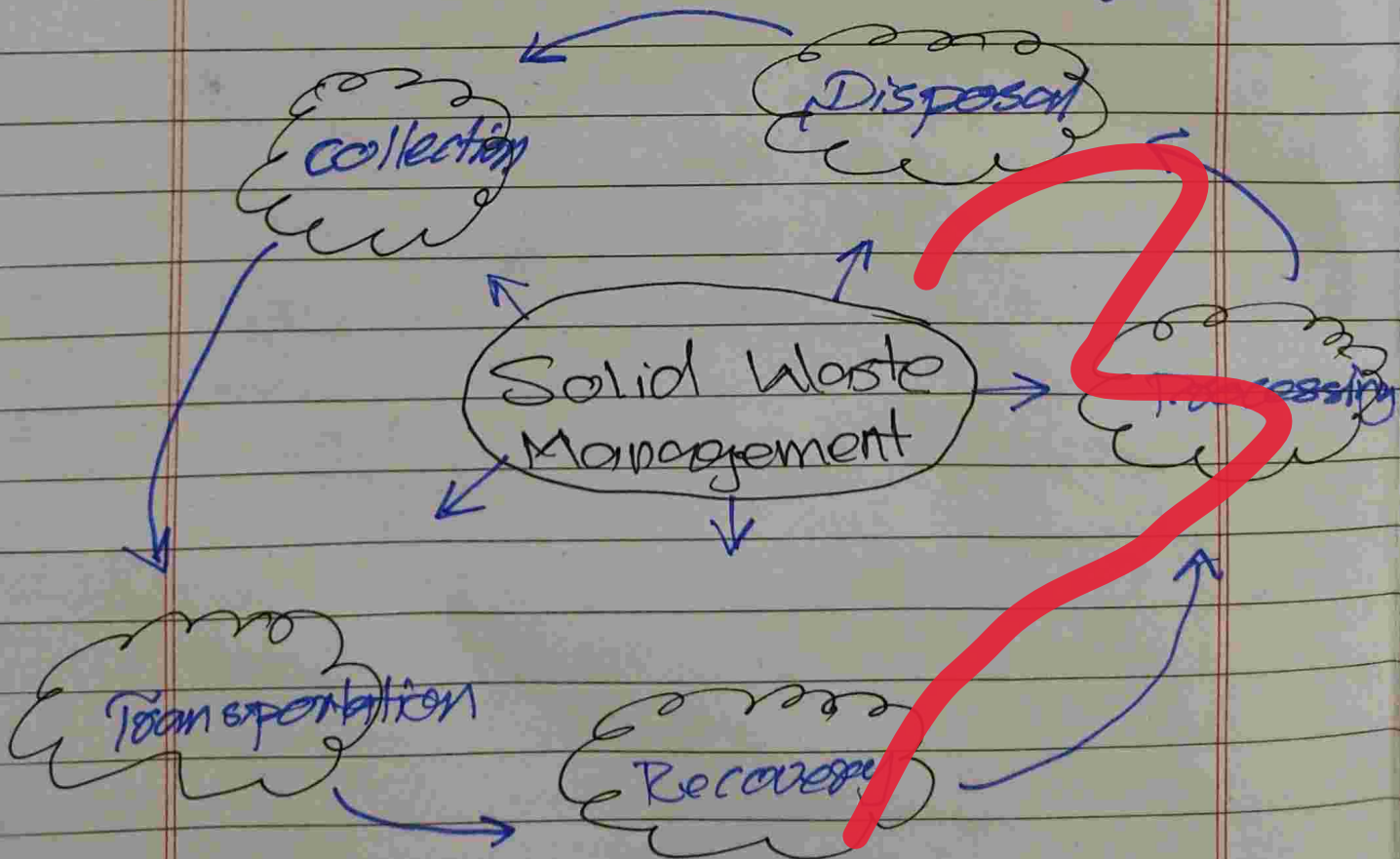
Dump in a open surface

b) Compositon:

Controlled biological decomposition

c) Land-filling:

To burn under ground



Q) Population Planning:
Ans Population Planning

By term population planning we mean, policies and planning to control and manage growth of a population. Population encompasses all males, females, girls, boys, babies, kids, aged-ones, etc.

Population planning includes family planning, education, access to means and resources and economic & business equal opportunities.

Benefits of Population Planning:

It brings economic equal opportunities for all. Resources can be enough divisible on controlled population.

It ensures a good education and sound

health. Controlled populations easily can get access to them.

a) Economic Stability

b) Improved Health + Education

c) Good Environment

d) Standard of Living

c) Good Environment

Mass population, mass garbage, controlled population, good and clean environment.

It is sound if people are enough not more than the capacity of an environment then it will also be good for all.

d) Standard of Living:

Less people with many resources obviously mean with high standards of living for all.

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Section

Q : No : 07

a)

Sum of 2 numbers = 23
Their product = 132

→ Imagine a_1 number and a_2

→ Their sum is $= a_1 + a_2 = 23$

$$2a = 23$$

$$a = 23/2$$

$$a = 11.5$$

It shows that numbers lie one and 11.5 and another above it

$$\rightarrow a_1 + a_2 = 23$$

$$11 + 12 = 23$$

Now checking their product is 132?

$$11 \times 12 = 132$$

Hence proved that 11 and 12 are the numbers.

$$\begin{array}{r} 11 \\ 12 \\ \hline 22 \\ 12 \times \\ \hline 132 \end{array}$$

Dos and Don'ts for General 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 2026. You're gonna rock in sha Allah. :)