

General Science and Ability

Mark Exam

A general set of instructions/suggestions to improve your score

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. :)

URDU X UGX
3
+3
+3
+3
Code for URDU is "XUGX".

(c)

Given:

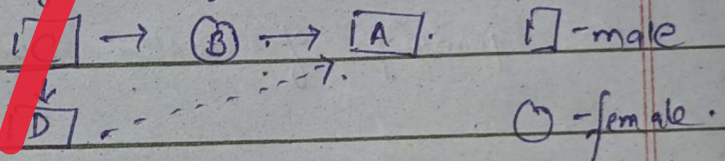
- A is brother of B.
- B is sister of C.
- C is father of D.
- D is a male member.

To find:

How D is related to A.

Solution:

According to given information



if B is sister of C then A is also brother of C as A is brother of B.

As C is father of D, therefore, D is Nephew of A.

(b)

Given:

Total mixture of milk and water = 60 l.

ratio of milk and water in mixture = 2:1

To find:

quantity of water in 1:2 mixture = ?

Solution:

Situation (i).

Quantity of milk in 60 litre mixture =

$$\frac{60}{3} \times \frac{2}{3} \text{ litres}$$

$$= 40 \text{ litres}$$

So quantity of water would be = $60 - 40$.

$$= 20 \text{ litres}$$

Now:

let the quantity of water in 1:2 mixture = x

Then quantity of milk would be = $\frac{40}{20+x}$

$$\frac{40}{20+x} = \frac{1}{1}$$

$$80 = 20 + x$$

$$80 - 20 = x$$

$$x = 60$$

As x = quantity of water then

Quantity of water in 1:2 mixture = 60 litres

Question : 07

(b)

Given :

No series = 8, 16, 24, 34, 40, 48.

To find :

The odd one out in the series = ?

Solution :

In a given number series the nos are multiple of 8.

$$8 \times 1 = 8$$

$$8 \times 2 = 16$$

$$8 \times 3 = 24$$

$$8 \times 4 = 32$$

$$8 \times 5 = 40$$

$$8 \times 6 = 48$$

According to the correct sequence the number after 24 should be 32 instead of 34.

The error in the series is therefore:

8 $\xrightarrow{\times 2}$ 16 $\xrightarrow{\times 2}$ 24 $\xrightarrow{\times 4}$ 34 $\xrightarrow{\times 5}$ 40 $\xrightarrow{\times 6}$ 48.

↓
32

"34" is the odd one out in the given series.

(9)

Given :

In a number an amount of 50 is added after dividing the number by 6.

Total sum of number = 60.

To find :

The number = ?

Solution :

Let the number = x .

According to given situation;

$$\frac{x}{6} = x + 50.$$

~~$$x = (x + 50) \cdot 6.$$~~

~~$$x = 6x + 300.$$~~

~~$$6x - x = -300.$$~~

~~$$5x = -300.$$~~

~~$$x = \frac{-300}{5} = -60.$$~~

~~$$x = -60.$$~~

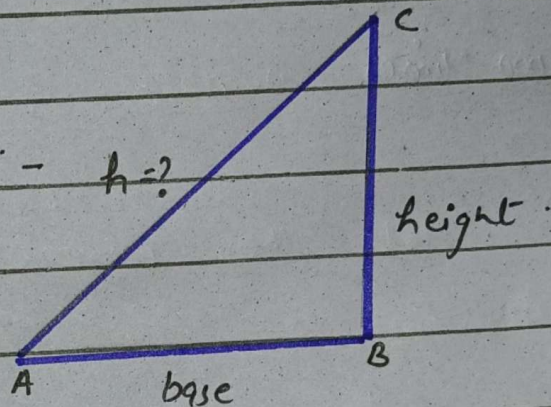
Therefore the number is -60 .

(c)

Given :

Height of the tower = BC = 15 m.

Distance from the base = AB = 20 m.

To find :The aerial distance = $h = ?$ **Solution :**Hypotenous - $h = ?$ 

According to Pythagoras Theorem :

$$h^2 = (\text{base})^2 + (\text{perpendicular})^2$$

$$h^2 = (20)^2 + (15)^2$$

$$h^2 = 400 + 225$$

$$h^2 = 625$$

$$\sqrt{h^2} = \sqrt{625}$$

$$h = 25$$

The aerial distance = $h = 25$ m.

Section - I

Question - 3:

(a)

What is double circulation? How heart adapts to keep blood in double circulation.

Introduction:

Heart is responsible for providing blood supply to human body. It pumps 100,000 times in a day to produce 5-6 litres. Normal blood pulse rate is 72-80 times.

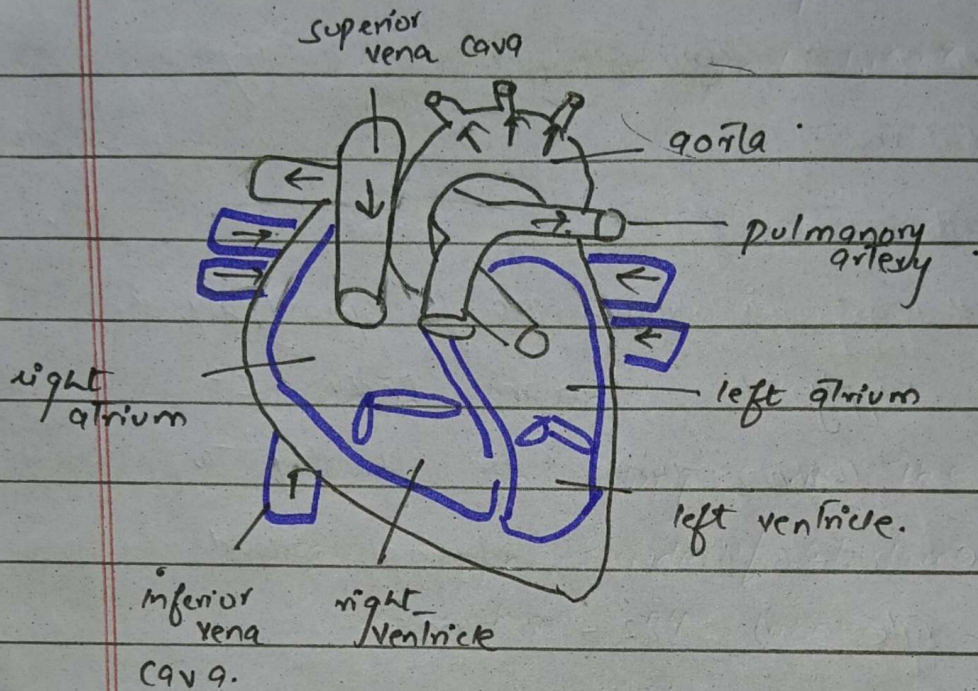
Anatomy of Heart:

• Human heart is consist of **four chambers**; two arteries and two ventricles.

• The right side of the heart has deoxygenated blood. Whereas, the left side of the heart has oxygenated blood.

• **Tricuspid Valve** is located between right art. atrium and right ventricle.

Bicuspid valve is situated between left atria and left ventricle.



Human heart

Double circulation:

In humans, heart regulates the flow of blood in two phases.

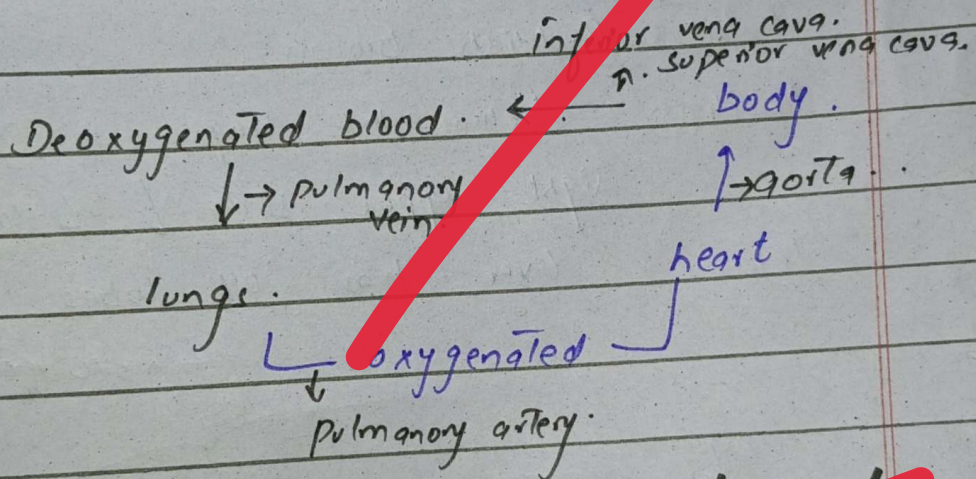
Firstly, the deoxygenated blood enters the heart through superior vena cava and inferior vena cava.

This deoxygenated blood is carried to lungs by pulmonary vein.

The blood is purified in lungs.

Secondly, The oxygenated blood is carried to heart by pulmonary artery. Here the blood is supplied to whole body by Aorta.

Therefore functions of heart is based on double circulation of blood.



Double circulation of blood

(b)

Liver is a chief chemist.

Introduction:

Liver is one of the chief organs

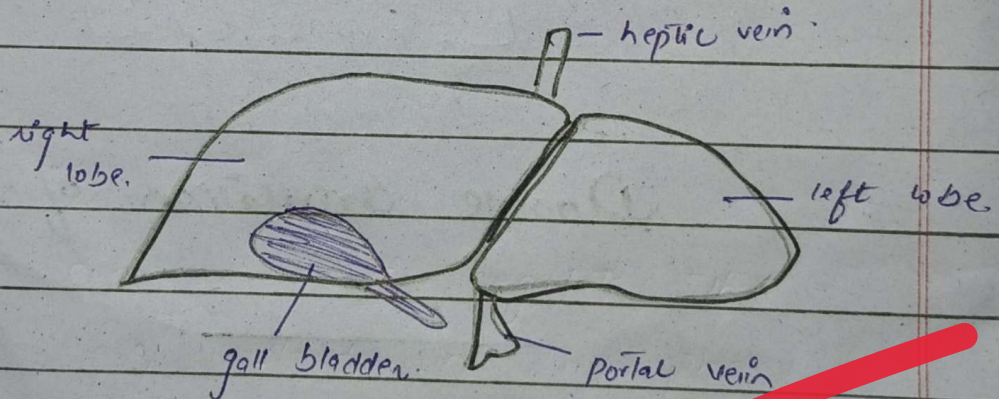
of human body. Human liver is the largest internal organ of human body. It play significant role in filtration of blood, bile production and break down of fats.

Anatomy of liver:

Color: Reddish brown.

Position: below the lungs at the right upper side of abdomen.

lobes: liver has 04 lobes.



Human liver

Liver as chief chemist:

liver is known as chief chemist of human body as it performs 500 chemical functions in human body.

(a) - liver helps in detoxification of human body.

(b) - liver also helps in break down of food by releasing enzymes from pancreas.

(c) Secretion of bile helps in digestion of food.

(d) liver is responsible for maintaining internal body temperature.

(e) liver stores energy in the form of glucose.

(c)

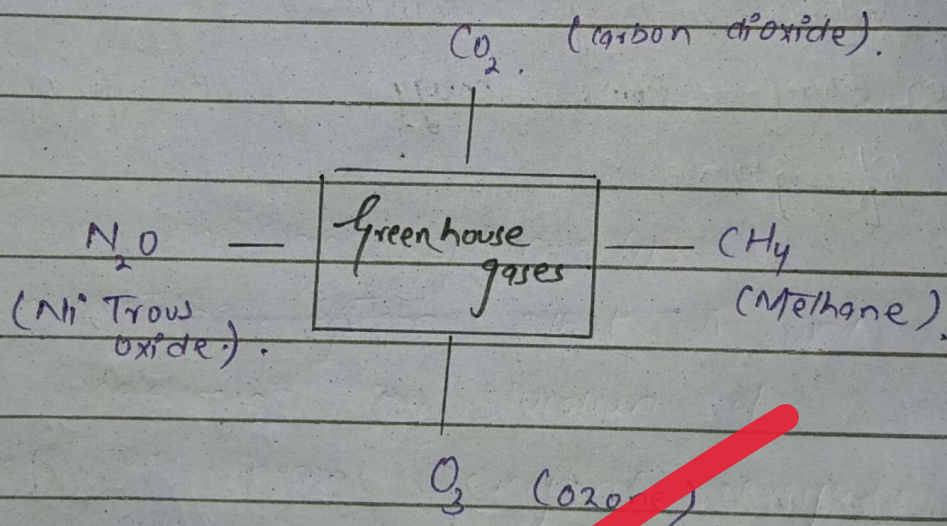
Greenhouse effect is a blessing. Relation of greenhouse effect with global warming.

Introduction:

Greenhouse effect is the phenomena in which absorption and emission of

infrared radiation by gases takes place. This process is beneficial in maintaining earth's temperature. However, ~~excess~~ large amount of such gases is resulting in adverse effects such as global warming.

Greenhouse Gases:



Greenhouse effect as a blessing:

• When sunlight reaches earth's surface, the light is either reflected back or absorbed.

• These absorbed energy is released

back by the planet. However, greenhouse effect prevents the loss or escape of energy.

- This increases the temperature of planet.

- If this process is not happening then the temperature of the planet would be -19°C make it imperfect for life.

Therefore, Greenhouse effect is a blessing.

Add reports

Greenhouse effect and Global Warming:

- With industrial revolution and excessive use of technology the greenhouse effect has been increased.

- This enhanced greenhouse effect is resulting in adverse environmental changes.

- The impacts of enhanced effect of greenhouse has given birth to

- global warming .
- Global warming includes melting of glaciers, increased sea level, worst climate change etc.

(d)

Working of Global positioning System:

Introduction:

Global positioning system or GPS is a navigating system that is used to determine the location of object or person everytime, everywhere.

Composition:

Global positioning system is composed of three segments;

- (1) Space segment
- (2) Control segment
- (3) User segment.

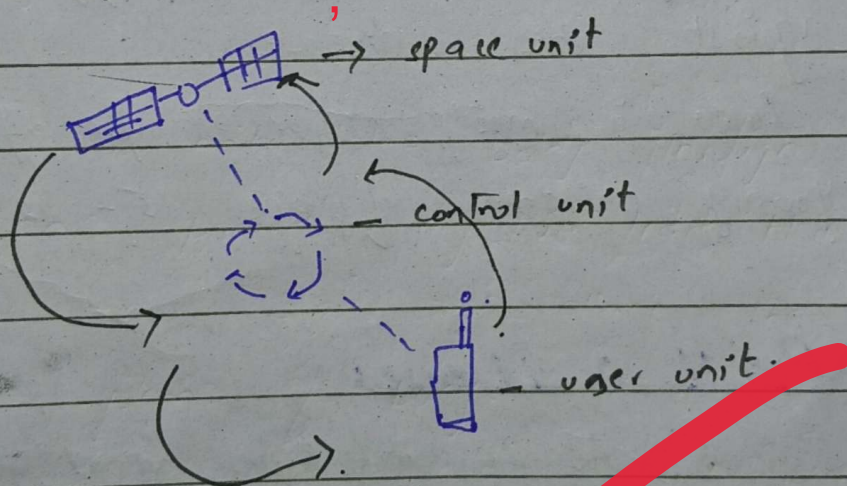
Working of GPS :

The GPS works in an efficient manner.

- The receiver in the space segment navigates the location and transmits it to control unit.
- The signals are then sent to user and exact location along with directions is navigated.

The GPS system works in a triangulate.

Properly explain the working



Working of GPS.

Working of phone?

Question - 5.

(b).

What is polio? Symptoms, causes of spread, prevention and vaccine.

Introduction:

Polio is a viral disease that causes dysfunctioning of human limbs. Polio has been successfully eradicated from world. However, Pakistan and Afghanistan are still fighting against the disease.

Polio is mostly responsible for affecting young children of age 5-12.

Polio Disease:

A highly infectious viral disease resulting in dysfunctioning of body limbs especially affecting the young children.

Symptoms:

- Initial symptoms include fever, fatigue, headache, vomiting, pain in limbs.
- Results in irreversible paralysis.

Causes of polio:

Polio virus majorly spreads through;

- contaminated water
- Poor hygiene
- Improper sanitation.

Developments:

Polio virus enters the body through mouth and proceeds digestive track. Here the virus starts to attack the nervous system of body.

Prevention:

"Prevention is better than cure".

Polio virus can be prevented through proper sanitation, immunization.

Vaccine :

Oral polio vaccine is given to children below the age of 5 to prevent the spread of virus in body.

(c)

Steps involved in solid waste management. Issues of solid waste management in Pakistan.

Introduction :

Pollution in any of its form is hazardous for atmosphere. Land is polluted in several way including agricultural wastes, industrial wastes, sanitary wastes, Municipal wastes or household wastes. Solid waste management is a practice step towards proper disposal of land waste. However, in Pakistan this is not fully developed.

Steps involved in Solid Waste Management

"The systematic management of generation, collection, transfer and disposal of solid waste is known as Solid Waste Management."

Solid waste management is done through;

(a) **Waste generation** - the production of waste material in households, industry, construction sites, sanitary, hospitals etc.

(b) **Storage of waste** - All the waste generated is stored at one collective place.

(c) **Sorting** - From the collected waste the reusable material objects are separated from waste ones. The waste products are supposed to be disposed.

Useful objects

→ Reuse

→ Recycle

→ Reduce

Explain properly

(d) **Transfer and Transport** - The waste material is then transferred to landfill site for dumping.

(e) **Disposal** - Finally, the land wastes are disposed to ground to stop it's contact with the external environment.

Issues of Solid Waste Management in Pakistan:

Major issues related solid waste management in Pakistan includes;

a- Absence of scientific solid waste management mechanism in big cities.

b- Improper handling of solid wastes.

c- Disposal of solid wastes in water bodies, or by burning the solid wastes.

(d)

Population Planning - Benefits of population planning.

Introduction:

World population is increasing at an alarming rate. There is a dire need to initiate population planning that includes regulating population growth through awareness. It would result in greater access to better resources to everyone and improved mother child health.

Population Planning:

"The process of ^{controlling} growth rate is known as population planning." The uncontrolled population growth has impacted the world ~~worstly~~.

Ways to initiate population planning:

Population planning can be initiated

through ;

(a) - Awareness to public through seminars, media talks, campaigns and public walks.

(b) - Educating the society through effective education courses.

(c) - Improved services by healthcare workers such as guiding the families about mother child health, family planning.

(d) - Effective policy making by government. such as one child policy adopted by china.

Address both parts of your question properly

Benefits of Population Planning :

Benefits of population planning include;

(a) Improved health conditions of women.

(b) controlled birth rate across the world.

(c) Would put an end to human adversities such as malnutrition, famine, draught etc.