Dos and Don'ts for the General Science & Ability Paper

Hi there — you've prepared well! Remember, knowing the content is one thing, but presenting it in the paper exactly as required is another. Here are a few key points to keep in mind:

1. For a 5-mark part, aim to write at least 2 and at most 3 sides of the answer sheet. Often, a question has two or three parts, and the marks are divided accordingly — so address each part fairly.
2. Manage your time wisely — you have about 35 minutes per full question, which comes down to around 8 minutes for each 5-mark part. Stick to this to avoid rushing later.
3. Make your answers look scientific, not just theoretical. Use flowcharts and diagrams wherever they add clarity.
4. Neatness matters — keep your handwriting clean, avoid cutting or overwriting.
5. Mind your spelling and grammar — while GSA doesn't deduct marks for these, your expression leaves an impression.
6. In the ability portion, explain analytical ability questions in words. For a 5-mark part, show all steps and provide clear explanations.

Good luck for CSS 2026 — you're going to ace it, in sha Allah! 🌟

Date: __/__/20__ MON TUE WED THS FRI SAT

Structure of Universe:

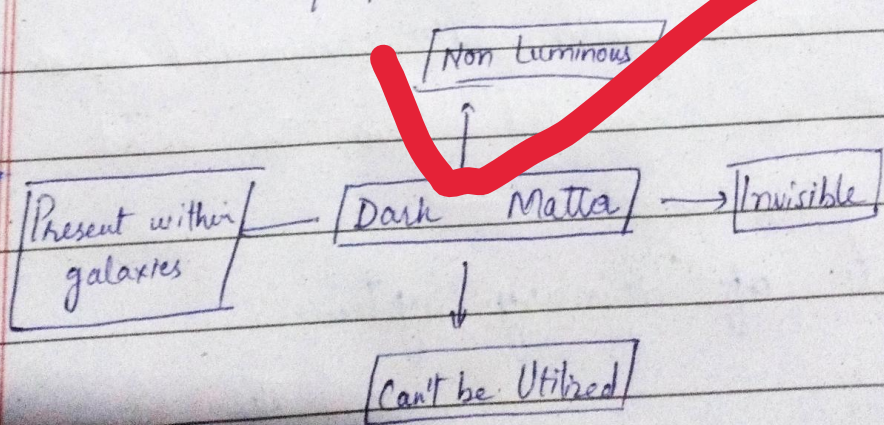
According to this theory the universe consists of two kinds of matter; Known Universe & Unknown Universe

- **Known Universe:**

It comprises around 5% of whole universe, composed of normal matter and normal energy. It is visible and sometimes invisible. According to theorists, it is luminous and have specific chemical properties. This energy can be controlled and utilized and have its own applicable laws.

- **Unknown Universe:**

It comprises almost 95% of the universe and is composed of **dark matter and dark (Unknown) energy.** This part of universe is invisible in nature and so its properties are unknown



Date: / /20

Dark unknown energy is responsible for big bang explosion and it is also present in galaxies. Since its properties are not known, this energy can't be utilized.

(b)

Urinary System and Working of Nephron:

Definition:

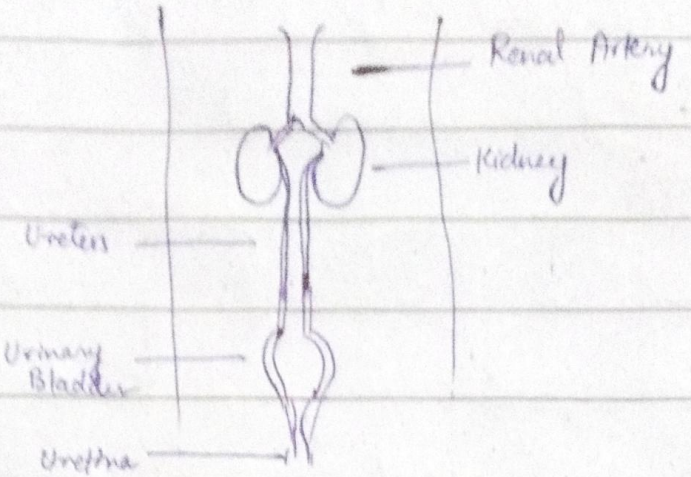
The system in human body which is mainly responsible for separation and removal of waste (urine) from the body is called urinary system. Waste of human body might be ;

- Feaces
- Urine
- Sweat

Urine contains water, salts, minerals (urea) etc. and it is separated from the blood through filtration.

Components of Urinary System

The urinary system consists of following organs



Renal artery carries blood from body towards kidney for filteration of blood

Kidneys perform the filteration process

Ureters are the tubes that carry urine out of kidney.

Urinary Bladder stores the urine temporarily

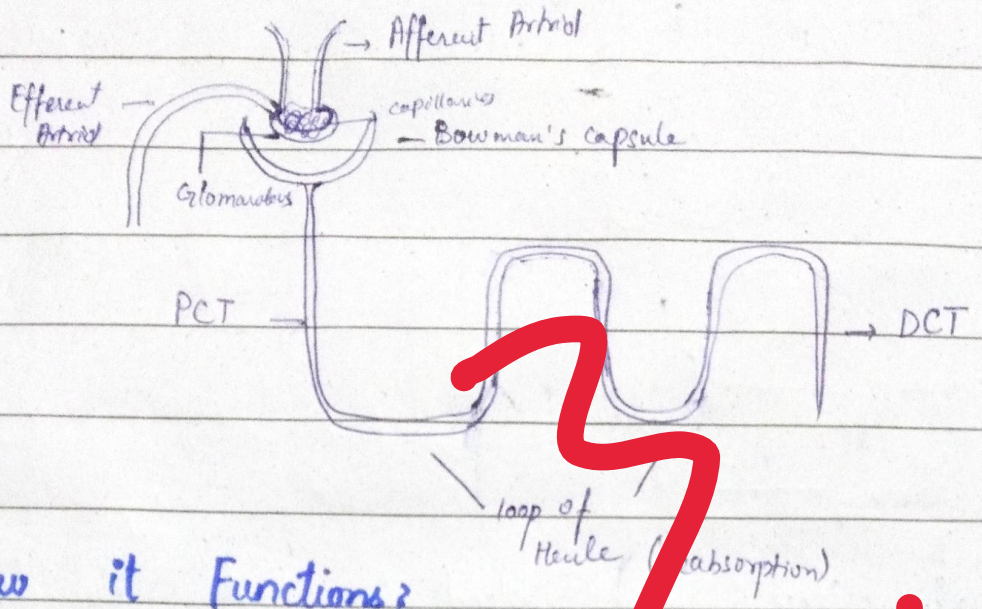
Urthra is a small opening to release the urine out of the body.

Working of Nephron

Structure:

Kidneys have a basic structured and functional unit called nephron which performs the major filteration process.

Date: ___/___/20___



How it Functions?

Blood enters The nephron through **Afferent artriol** and then **glomerulus** containing bunch of Capillaries passes it. Filterate moves towards **Bowman's capsule** and then ~~dist~~ Proximal and distal convulated tubules. Here, in **Loop of Henle** reabsorption of water and salts occure due to the interactions of **peritubular capillaries**. Waste moves down to the waste collecting duct and filtered blood moves out of kidney through effesent artriol.

Date: __/__/20__

MON TUE WED THS FRI SAT

(C)

Unbalanced Diet:

It refers to the diet that lacks proper proportion of essential nutrients such as carbohydrates, proteins, fats, vitamins & minerals. It is either the lack or excessive and inadequate intake of certain food kinds

Causes of Unbalanced Diet.

The major causes of unbalanced diet are.

- Overeating junk food which are high in sugar and salt and fats
- Lack of timely meal.
- Lack of awareness about nutrit

How it Effects Healthy Living:

Un balanced diet may cause serious problems for human health.

Malnutrition

Malnutrition is the major effect

of unbalanced diet. It is caused due to deficiency of essential nutrients like vitamins and minerals It may lead to anemia and rickets.

Obesity:

Intake of high fat food leads to obesity and weight gain. It may cause severe diseases like diabetes and heart failure.

Immunity deficiency

Lack of various nutrients weaken the immunity of human body.

Harm to Digestive System:

Lack of dietry fibre may harm the digestive system. Also the consumption of heavy fats and salts and spices may harm the digestive system.

Chronic Diseases:

Unbalanced diet leads to various chronic illnesses like hypertension, cardiovascular diseases and also some kinds of cancers.

It sometimes mental health issues due to intake of excessive magnesium

and zinc. It causes depression, anxiety and weakens the cognitive skills.

(d)

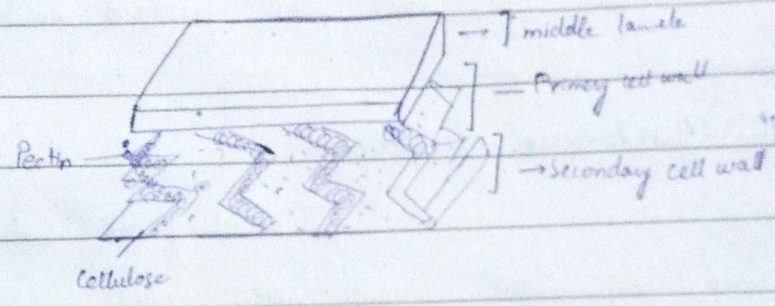
Structure and Functions of

- **Cell Wall:**

In plant cell, the outermost layer is cell wall and cell membrane lies beneath it.

Structure:

It consists of three layers



Primary cell wall is a compact structure. Secondary cell wall is thick and rigid.

Function:

1- Provides covering and shape to the cell.
2- It protects internal organelles.
3- Provides strength and rigidity to the plant.
4- It is a source of wood, cotton & paper.

Date: __/__/20__

MON TUE WED THS FRI SAT

Cell Memberane:

It is the outermost layer in animal cell and secondary layer in plant cell.

Structure:

It is composed of 40% lipids and 60% proteins. Carbohydrates are also present in small quantity.

- **Fluid Mosaic Model of Cell membrane:**

According to this model plasma membrane consists of two layers of lipids with protein molecules embedded in it.

- **Unit Membrane structure:**

According to this structure the two layers of lipids are sandiwiched by protein layers.

Function:

It performs various important functions

1- **Transport Material:**

It is a semi permeable membrane helps in transportation of selective material in and out of cell.

2. **Regulation.**

It helps in three types of regulation

- **Osmosis** i.e The movemat of water molecules from area of high concentration to hagh concentratio
- **Diffusion.** The movement of ions from area of low to high concentration

3) **Endocytosis:**

It also helps in breakdow and engulf of dead cell organelles

4) **Nerve Impulse.**

It provides nerve impulse to nervous system

Cytoplasm:

Cytoplasm is the semi-fluid present within the cell.

Structure.

It consists of cytosol which comprise. 90% of water. The viscous gel within it is called 'gel' while non-viscous material is called 'sol'.

Date: __/__/20__

MON TUE WED THS FRI SAT

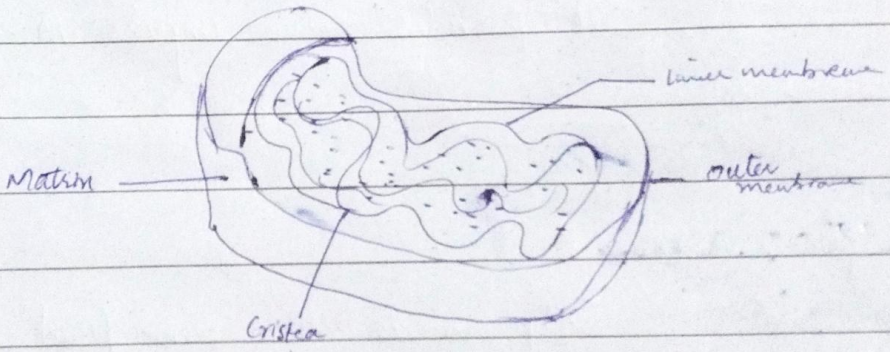
Function:

- It works as the storehouse of cell.
- It is a metabolic site for metabolism within the cell.
- It also helps to place orgenelles in their places.

Mitochondria:

Mitochondria is a spherical shaped orgenelle of cell.

Structure:



It consists of two membranes. Smooth outer and convulated inner membrane. It contains matrix that contains convulated structure called cristea.

Function:

It is called as **'The powerhouse of the cell.'** It performs a very important

function i.e. Protein synthesis. It ... energy of stored into highly ... compounds & store energy.

Matrix of mitochondria contains many enzymes ... which gives metabolic energy to ... cycle and aerobic respiration. The energy released through these processes is stored by mitochondria and is used when needed.

Q. No. 3

(a)

How global Warming can be Reversed?

Global warming has become an ~~growing~~ issue in current years. It has become very severe that it can only be reversed if proper and strict measures are taken.

1- **Stabilizing Levels of Greenhouse Gases.**

This is the most important thing to do for

reversal of global warming. Decarbonization is the most important measure to be taken. Government and management must promote the renewable sources of energy.

2- Increasing Global Forest Cover.

It is also considered as the most approachable and helpful solution. Every country in the world must increase the plantation of trees and forests cover must be increased. Trees help in trapping the harmful amount of heat. It will surely lead to better environmental conditions.

3. Provision of Sustainable Transport.

Use of old and damaged engines leads to pollution and global warming. Hence government and management should promote the use of public vehicles instead of private transport. They should also aware people of the harms of increased usage of diesel and lead containing petrol.

Date: __/__/20__ MON TUE WED THS FRI SAT

4. **Sustainable Urbanization:**

Governments should promote vertical urbanization instead of horizontal one. Since the second half of 20th century, urbanization has increased excessively. It has become unstoppable now. It cannot be stopped by if managed properly, it will surely help in reversing the global warming.

Sponge city projects in China has provided help in mitigating the global warming. 'Miyawaki City' has become a model city with patches of greenery to be a safe city.

5. **Sustainable Industrialization**

Governments must take proper measures to tackle the growing air pollution and harmful release of materials causing increase in temperatures. There must be proper **absorption methods** and technological devices to control the release of smoke and other gases.

Date: / /20

MON TUE WED THS FRI SAT

6. Implication of Committments:

There have been various agreements including Montreal and Kayoto Protocol and Paris agreement. The Countries failed to implement the decisions taken in those meetings. They should take proper measures to implement those solutions.

7. Disaster Management:

Governments and authorities must work on their disaster management and control which lead to great disruptions and mass movement of population leading to mismanaged environmental factors.

8. Limit Population Growth and Environmental Awareness.

People must be made aware of the harms of population growth and they must be taught about the consequences of growing number of people in the world.

Date: __/__/20__

MON TUE WED THS FRI SAT

(C)

Working of Optic Fiber and Mobile Phone:

Optic Fiber:-

Optic fiber is a thin, flexible strand of glass or plastic which transmit light signals over long distances.

Working:

- Data in optic fiber is sent as pulses of light generated by Lasers or LEDs.

It works on the principle of **Total internal Reflection.**

The core of fiber has high refractive index than cladding. When light travels inside and hit the core-cladding boundary at certain angle, it is reflected back into the core instead of passing into cladding. This phenomena is called total internal reflection.

- **Light Propogation**

Light keeps bouncing inside core and travels long distances.

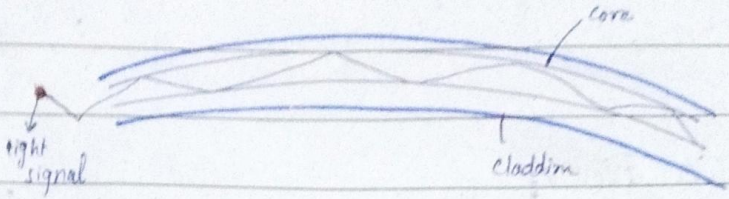
- **Reception**

At receiving end, signals are again converted

Date: / /20

MON TUE WED THS FRI SAT

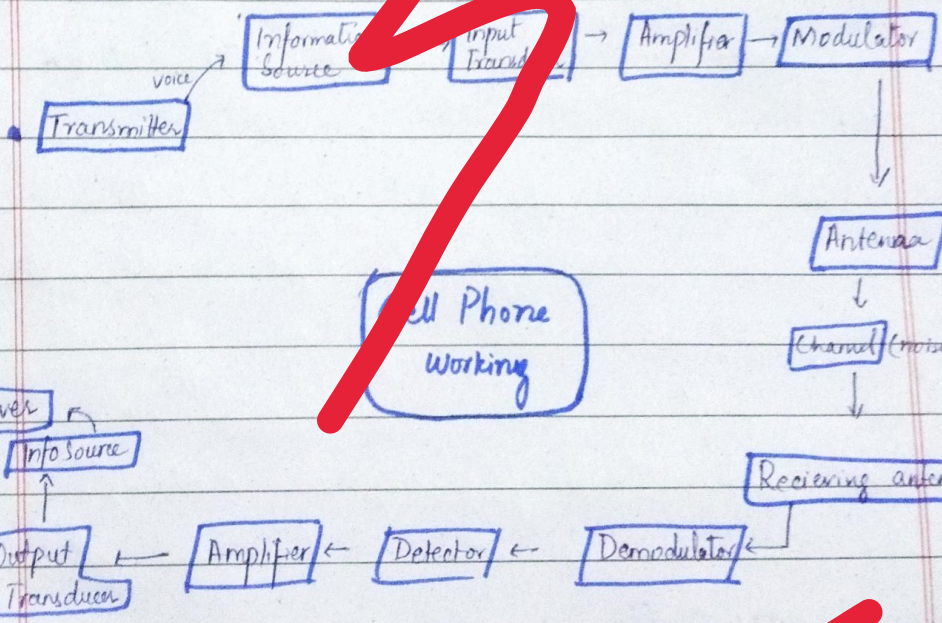
into electrical signals.



(Traveling into the core)

Mobile Phone.

Mobile phone works according to the following process.



Cell Phone Working

Information starts from transmitter and the voice is turned to mechanical signals. Transducers submit these signals to Amplifier and then it is modulated to the channel where

receiving antenna receives information. It process the signals back into form of sound and receiver hears the sound. Sometimes at channel, there are some noises which disrupt the sound.

(d)

- **Food Additives**

It is defined as

"A substance that is added to food during preparation or storage and it either becomes a part of food or effects its characteristics."

These substances are used in food to maintain its nutritive quality, enhance storage quality and to make it easy to process or pack.

For Example,

Preservatives like sodium benzoate, Potassium sorbate in cheese, sulphur dioxide in wines etc. Colour additives, flavour enhancers and various sweetness etc.

Date: ___/___/20___

MON TUE WED THS FRI SAT

Food Preservatives.

According to WHO,

'Food preservatives are substances that are added to food to prevent from spoilage by microbial growth or undesirable chemical change.'

These preservatives extend the shelf life of food by inhibiting the growth of bacteria.

For Example Common preservatives used is Sodium benzoate, Sulphur dioxide, Ascorbic Acid etc.

Food Adulteration:

It is defined as

'The intentional addition or removal of substances in food to increase quantity or improve its appearance for profit.'

It is only done for personal gain & profit.

Example:

Adding brick powder to red chili to enhance the colour and amount. Mixing of water in milk is also an example of food adulteration

Food Contamination:

It is defined as

'The unintentional presence of harmful substances in food like bacteria, chemicals or toxins etc.'

It usually occurs due to poor hygiene

For Example: addition of metal shreds from machines into food

Date: __/__/20__

MON TUE WED THS FRI SAT

Q. No. 7

(A)

Given Data:

40% of a number = $\frac{2}{3}$ of another no.

Let two numbers are a and b

40% of a = $\frac{2}{3}$ b

Ration of a & b = ?

Solution:

40% of a = $\frac{2}{3}$ b

$\frac{40}{100}$ a = $\frac{2}{3}$ b

$\frac{2}{5}$ a = $\frac{2}{3}$ b

6a = 10b

$\frac{a}{b} = \frac{10}{6}$

a : b = 3 : 5

The ratio of [illegible] numbers is 3 : 5

(B)

Data Given:

S.P of 17 balls = 720 Rs

Loss = CP of 5 balls = 5x

C.P of a ball = ?

Solution:

Let The C.P of 17 balls = 17x

Loss = C.P − S.P

Date: __/__/20__ MON TUE WED THS FRI

$5x = 17x - 120$

$2x = 120$

$x = 60$

The C.Price of one ball is 60 Rs

(C)

Given Data:

Let a [illegible] be A and son as B

According to given data

$A = 24 + B$ — (i)

After 2 year → Twice the age of his son

$2 + A = 2(24 + B)$ — (ii)

Putting eq. (i) into (ii)

$2 + (24 + B) = 2(24 + B)$

$26 + B = 48 + 2B$

$B = 22$ ✓

The Age of Son (B) is 22.

Date: / /20

MON TUE WED THS FRI SAT

(D)

Given Data:

Rashid = 6 hrs and 32 pages

$= \frac{32}{6} = \frac{16}{3}$ pages per hour

Kamran = $\frac{40}{9}$ = 8 pages per

Solution

Combining the work of two for 110 pages

i.e.

$8\frac{16}{3} + 8 = 110$

$\frac{40}{3} = 110$

$= \frac{33}{4}$

$= 8.25$ hours

They'll take 8.25 hrs for 110 pages assignment.

Date: __/__/20__

MON TUE WED THS FRI SAT

Q. No. 8

(A)

5 different houses in a row

Solution

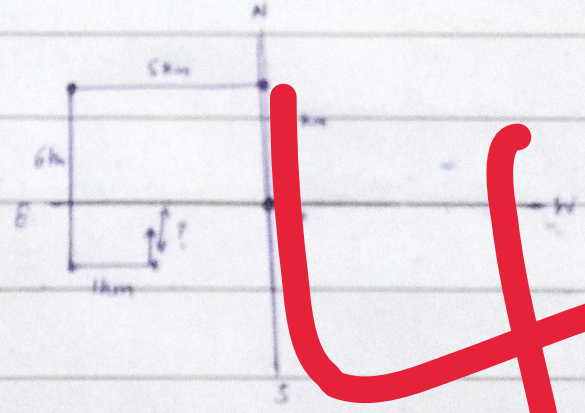
According to given arrangement

D B [A] E C

A is in the middle of all.

(B)

Let's draw the given condition



- You are **1km** from the place you started
- While Finishing you'll be running towards **North**
- After taking second turn direction was **South**
- We have to move towards **West**.

Date: /__/20__ MON TUE WED THS FRI SAT

(c)

Given anagrams

a) THRSI

b) AOTC

c) EOUBSL

d) K TRIS

e) RETAEWS

Let's solve these anagrams

a) Shirt

b) Coat

c) Doubles

d) [illegible]

e) Wateis

(c) and (e) are odds since others are clothes while they aren't.

There are [24] [illegible] it