

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:

SECTION I

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.
QUESTION NO 04
PART "A"
PLANTS CONTAINING CHLOROPHYL
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.
Plants belong to Kingdom plantae. The main characteristics of Kingdom plantae are
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.
1 - Autotrophs plants in Kingdom plantae are autotrophs which mean they can prepare their own food.
5. Mind your spelling and grammar — while GSA doesn't deduct marks for these, your expression leaves an impression.
2 - Photosynthetic Green plants are photosynthetic which means they undergo photosynthesis. They prepare their own food.
6. In the ability portion, explain analytical ability questions in words. For a 5-mark part, show all steps and provide clear explanations.

Here's a brief key/sample of your Ability questions

Q.6

a) Candy ratio problem

Given: Packets in flavors Apple : Berry : Cherry : Date = 3 : 6 : 2 : 5.
Photosynthesis
$$H_2O + CO_2 \xrightarrow[\text{chlorophyll}]{\text{sunlight}} C_6H_{12}O_6 + H_2O$$

Asked: If Apple candies exceed Date candies by 35, how many Berry candies are there?

Note (consistency check): The ratio shows Apple  3 parts

Date: _____

(2)

3- Source of Oxygen

Green plants are the major source of oxygen on the planet earth. Oxygen is released as a by-product during photosynthesis.

4- Neutralize Carbon dioxide

Green plants play a vital role in neutralizing the carbon-dioxide, which is a major air pollutant and in this way they keep our environment clean.

5- Base of Food Chains

plants, being producers are base or foundation of food chains. In this way they play a key role in food chain and ecosystem.

6- Contain Chlorophyll

One differentiating characteristic of plant is that they contain chlorophyll, a chemical responsible for green colour of plants.

Date: _____

(3)

CHLOROPHYL IN PLANTS

Chlorophyll is a chemical in green plants responsible for their colour.

1- Give characteristic Green Colour to plants

Chlorophyll gives the green colour to plants.

2- Nature of chlorophyll

Chlorophyll is protein in nature. It is a complex structure with magnesium ion (Mg^{+}) in its center.

3- Essential for photosynthesis

Chlorophyll play an important role in photosynthesis and is a site for photosynthesis. It is the chemical responsible for photosynthesis. Any deficiency in chlorophyll is a result of viral or bacterial attack will hamper its ability to carry out photosynthesis in plants and hence plant will not survive.

Date: _____

(4)

PART B

ROLE OF RIBOSOMES IN PROTEIN SYNTHESIS

Ribosomes play an essential role in protein synthesis. They carry out their vital function of protein synthesis in a number of ways like:

a) part of Ribosomal RNA - A site for protein synthesis

These are the crucial part of ribosomal RNA which are the primary sites for protein synthesis in the cell.

b) Role of Ribosomes in transferring Amino acids for protein synthesis

For protein synthesis, Amino acids are transported by transfer (t-RNA). The ribosomes assist the transfer RNA in carrying the amino acids to the synthesis sites in the cell.

Date: _____

(5)

PART C

METHODS OF SOLID WASTE MANAGEMENT

Solid waste management (swm) refers to proper disposal of solid or semi solid wastes.

Following are major methods employed in solid waste management.

a) OPEN DUMPING

This is the oldest and traditional method of solid waste management in which solid is dumped in open dugged pits. This is a unsafe and not recommended method of solid waste management.

b) LANDFILLS

This is another method in which solid waste is carried and filled in specific called landfills. Landfills are made as per a specified criteria to ensure the safety of environment. It is also not a recommended way to dispose off the solid waste.

Date: _____

(6)

c- INCINERATION

It is another way in which solid waste is burned using specific protocol and under a controlled setup. This is also a not recommended method as it causes air pollution.

d- Composting

It is another method of solid waste management in which solid waste is ultimately converted to a mass known as compost which is further utilized as a fertilizer. This is among the recommended ways to deal the solid waste as it not only converts the waste to a useful compost but is also an eco-friendly and economic way to decompose the solid waste in a proper manner.

Date: _____

(7)

PART D

(i) Biofuel

Biofuel is defined as the fuel obtained through ~~Bio~~ materials specifically of plant sources like wheat, ethanol etc.

(ii) Adulteration

It is a process through which food is contaminated by addition of certain substances which are harmful for human health. This can be a biological or chemical contamination. e.g. milk is contaminated with formalin to preserve it over a long period of time.

(iii) Hydrosphere

Hydrosphere refers to part of Earth containing water. This includes glaciers, oceans, polar ice, underground water resources, surface water resources like rivers, ponds lakes and water vapours.

Date: _____

(8)

TROPOSPHERE

Troposphere is the first layer of atmosphere. It is the layer which extends from surface of earth till 12 km. It is the layer in which life exists, airplanes fly and clouds are formed. Most of the mass of atmosphere (80%) is present in this layer.

ISOTOPES

Atoms of the same element having same atomic number but different mass number are called isotopes.

Atoms of some element have same number of protons but different number of neutrons are called isotopes.

eg ${}^6_{12}\text{C}$ and ${}^6_{13}\text{C}$ are isotopes

${}^{92}_{234}\text{U}$, ${}^{92}_{235}\text{U}$ and ${}^{92}_{238}\text{U}$ are isotopes.

QUESTION NO 05

PART A

CAUSES OF POPULATION EXPLOSION

Following
are the major causes of
population explosion in Pakistan.

1. Lack of Awareness in people regarding seriousness of the issue.
2. Religious misinterpretation of the issue is another cause of this issue.
3. Lack of education in rural societies is another cause of population explosion in Pakistan.
4. Socio-cultural Norms in Pakistani society also contribute toward this issue. The urge for more child or wish to have superiority in number of sons in rural cultures contribute toward the population explosion.

Control measures

1- Awareness about the issue
The public must be made aware about the issues related to problems caused by increasing population.

2- Services of clerics must be sought

Services of clerics must be sought to clarify the religious outcomes and real interpretation of religious ideas regarding this issue. The services of clerics can be availed to change the socio-cultural values of the society.

3- Use of media specifically social media

All means specifically the use of all ~~sorts of~~ media including social media must be done to aware the public about this issue.

4- Free and Easy Access to contraceptive measures

The people must

Date: _____

(11)

to give the idea and
easy accessibility and use to
contraceptive measures like
etc. Furthermore, the guidelines
regarding use of such measures
should be available with ease.

PART C

ATMOSPHERE AS A BLANKET OF AIR

The area around
the surface of earth is
called atmosphere. It is called
as blanket of air due
to the reasons;

- 1) 99% of atmosphere is
made up of air.
- 2) It contains around 78%
of Nitrogen.
- 3) Similarly, it contains around
21% of oxygen.
- 4) The remaining 1% is composed
of CO_2 , water vapours (gaseous)
etc.

⇒ Therefore, it is
easy that atmosphere is a
blanket of air around earth.

PART B

REMOTE SENSING

Remote sensing is a technique in which the information about interior of a surface is collected without being digging or going inward into the surface.

In this process, the waves are usually sent to the surface and changes in waves are interpreted and information about inward structure is gathered.

ROLE OF GIS IN ENVIRONMENTAL SCIENCE

(1) It is used to collect data in post-disaster era, where it is not possible to go in person.

(2) It can be used in disease mapping to know the hub or alien cause of a certain disease.

PART D**HYDROMETER**

It is a device used to measure the water content or depth of a water body.

EPICENTER

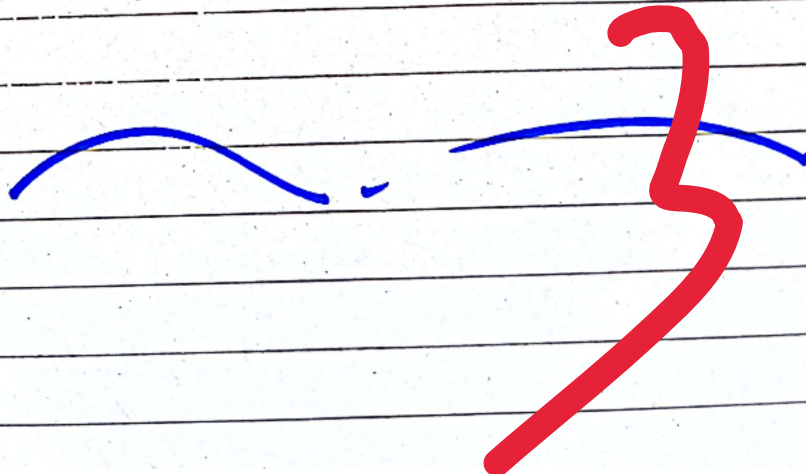
It is the place from where the seismic waves originate and then travel.

EYE WALL OF CYCLONE

It refers to the specific shape of cyclone, including its

LIGHT YEAR

Light year is an astronomical unit of distance. It refers to the distance covered by light in one year.



Date: _____

(14)

SECTION II

QUESTION NO 06

PART B

SOLUTION

Price of camera = 200 \$

$$25\% \text{ off} = \frac{25}{100} \times 200$$

$$= 50$$

After discount = 200 - 50

$$= 150$$

Tax = 6%

$$= 6\% \text{ of } 150$$

$$= \frac{6}{100} \times 150$$

$$= \frac{3 \times 15}{10}$$

$$= \frac{3 \times 15}{2}$$

$$= 9 \$$$

So Final Price = 150 + 9

$$= 159 \$$$

Date: _____

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PART C

speed of Bicycle = 18 km/hr

Distance covered = 36 km

Time taken = $36 / 18$

= 2 hours

Time from 1 PM = $1 + 2 = 3 \text{ PM}$

So he will reach at
3 PM.

PART D

(i) Statistics

(ii) ALGEBRA

Date: _____

(16)

QUESTION NO 07

PART B

Total saving = 25,000

Ratios = 1:2:3:4:5

Lowest ratio = 1

Sum of ratios = $1+2+3+4+5 = 15$

Share of smallest = $\frac{1}{15} \times 25,000$

$$\frac{25000}{15}$$

$$= 1666 \text{ RS}$$

Row
15

PART C

(1) 2, 6, 18, 54, 162, 486

~~does not follow the rule~~
This is a perfect sequence in which each next digit is multiplied by 3 and previous number.

(2) 3, 5, 7, 11, 13

3, 5, 7, 11, 13, 17 (Sequence of prime numbers.)

Avoid cutting