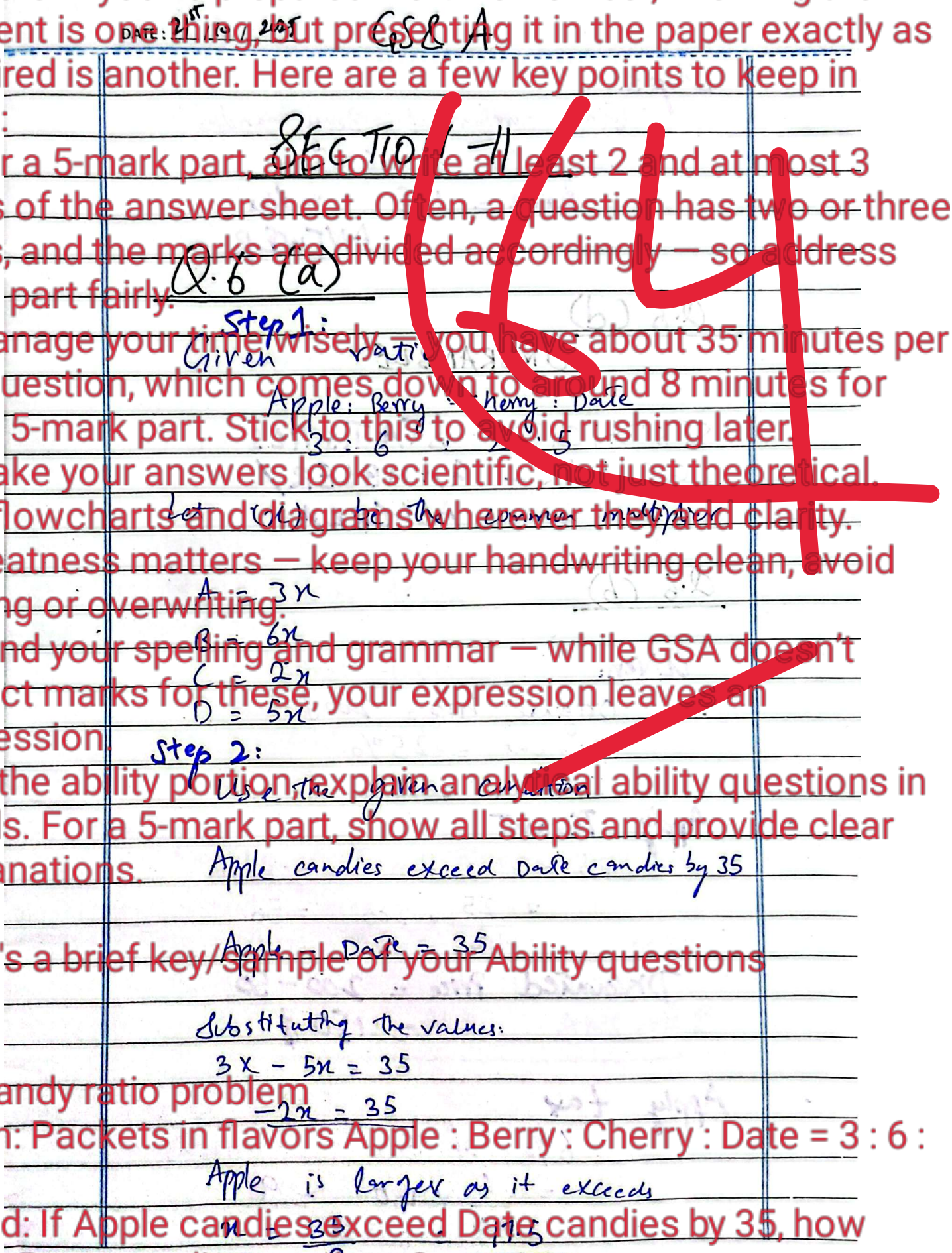
Dos and Don'ts for the General Science & Ability Paper

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.

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



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

CamScanner

DATE __/__/____

Step 3:

Total number of Berry candies

Berry : 6x = 3(17.5)

Berry = 105 candies

ANSWER

Q.6 (d)

UNSRAMBLE

I- STSTAICITS - STATISTICS

II- LGEBMAR - GAMBLER / ALGEBRA

Q.6 (b)

Given:

Original Price = 200 $

Discount = 25%

Sale Tax = 6%

- **Apply Discount**

25% of 200

$= \frac{25}{100} \times 200 = 50$

Discounted Price = 200 - 50

= 150 $

- **Apply tax**

6% of 150

$= \frac{6}{100} \times 150 = 9$

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Total Amount Paid

= 150 + 9

= $ [illegible] ANSWER

Q.6 (c)

Given

Distance = 36 km

Speed = 18 km/h

Start Time = 1:00 PM

Step 1. Time taken

Time = Distance / Speed

= 36 / 18 = 2 hours

Step 2:

Adding Travel Time to Start Time

1:00 PM + 2 hours = 3:00 PM

The bicycle will reach its destination at 3:00 PM ANSWER

Q.7 (a)

Given

Diameter = 14 cm

Radius (r) = 14/2 = 7 cm

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Using the formula

$$V = \frac{4}{3}\pi r^3$$

$$V = \frac{4}{3} \times \frac{22}{7} \times 7^3$$

$$= \frac{4}{3} \times 22 \times 72$$

$$= \frac{4}{3} \times 1078$$

$$V = \frac{4312}{3} = 1437.33$$

ANSWER: 1437.33 cm^3.

Q.7 (b)

Total savings = 25000 Rs

Ratio = 1 : 2 : 3 : 4 : 5

Total parts

1 + 2 + 3 + 4 + 5 = 15 parts

Value of one part

$$= \frac{25000}{15} = 1666.67$$

Smallest share

Multiplying the value of one part by smallest number in the ratio (1).

1 × 1666.67

= 1666.67 Rs.

ANSWER

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Q7-(c)

i- 2, 6, 18, 54, 162, 486

Let's check the Pattern

2

2 x 3 = 6

6 x 3 = 18

18 x 3 = 54

54 x 3 = 162

162 x 3 = 486

- Each term gets multiplied by 3

No error- pattern is consistent

ii- 3, 5, 7, 11, 13, ___

The series include prime numbers.

the next prime number after 13 is 17

3, 5, 7, 11, 13, 17

Q 7-(d)

Given

a = 5cm

b = 12 cm

c = 13 cm

check if Hs a right Triangle

$a^2 + 5^2 < c^2$

$5^2 + 12^2 = 13^2$

$25 + 144 = 169$

$169 = 169$

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It's a right Triangle, with hypotenuse = 13cm.
The angle opposite 13cm is a right angle, that is 90°.

Finding the Other Two Angles

Let,

A = angle opposite side a = 5cm
B = angle opposite side b = 12cm
C = 90°

Now,

Using

$$\sin A = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{5}{13}$$

$$A = \sin^{-1}\left(\frac{5}{13}\right)$$

$$A = 22.6°$$

For B,

$$B = C - A$$
$$= 90° - 22.6°$$
$$= 67.4°$$

Three Angles are:

$\angle A = 22.6°$
$\angle B = 67.4°$
$\angle C = 90°$

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Q 5 (a)

Population Explosion in Pakistan

Causes:

1- **High Birth Rate:**
Lack of access family planning awareness

2. **Early Marriages:**
High rates of early or child marriages, which lead to early and more frequent pregnancies.

3- **Lack of awareness:**
High illiteracy rate means people unaware of the devastating impacts of over population and reproductive health.

4- **Economic Factor:**
Poverty, unemployment among others are the factors that contribute to families considering more children.

5- **Lack of health facilities**
Limited access to contraceptives and maternal health care.

Control Measures

1- To introduce family planning programs can be through local clinics

2- To empower women through education for decision making.

3- To put restrictions on child marriage

4- To restrain child labour.

5- To strethgen health services and raise awareness through

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media campaigns.

Q.5 (b)

Remote Sensing:-

It is a process of obtaining information about an object on earth surface typically through sensors or satellites that detect reflected or emitted radiation.

Role of GIS in E.S.

Environmental Monitoring (i)	Resource Management (iii)	Data management and analysis (v)
Disaster Management (ii)	Urban planning (iv)	

(i) Helps tracks deforestation and pollution patterns.

(ii) Identifies flood or earthquake-risk areas for early warning.

(iii) Asst in mapping natural resources like water bodies and forests.

(iv) Supports land surveying analysis and

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development decision-making.

v) GIS systems use to collect, manage, analyze spatial data from sources like satellite imagery.

Q5 (c)

"The Atmosphere is the blanket of Earth"

Justification

Just as a blanket keeps you warm, the atmosphere traps heat to maintain a habitable temperature.

(1) Regulates Temperature

- Atmosphere traps heat, keeping the Earth warm through the greenhouse effect and preventing extreme temperatures.

(2) Protection from Solar Radiation

- Protect earth by not preventing harmful solar radiation like UV rays, which causes serious skin diseases, to reach Earth.

(3) Shield from Meteors

It shields Earth by burning up most meteors, protecting the earth's surface from devastating impacts.

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(4) Provides gases to sustain life

It is composed of gases, like oxygen and carbon dioxide, necessary for life and photosynthesis.

(5) Supports ecosystem

By reducing extreme temperatures, it enables rainfall and weather to support ecosystem.

Q.5(d)

Define the following.

i) **Hydrometer:**
An instrument used to measure the relative density (specific gravity) of liquids.

ii) **Epicenter:**
The point on the Earth's surface directly above the focus of an earthquake

iii) **Eye wall of Cyclone:**
The ring of intense thunderstorms surrounding the eye of a cyclone, having strong winds and heavy rainfall.

iv) **Deep Focus:**
An earthquake with a focus (hypocenter) deeper than 300km beneath the Earth's surface.

v) **Light Year:**
The distance travelled by the light in

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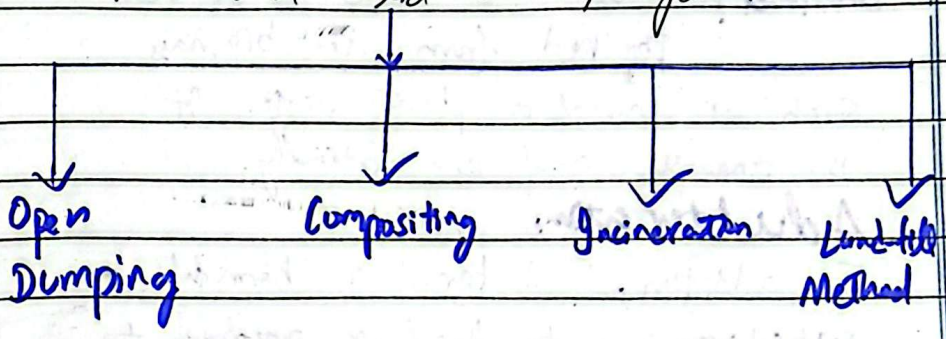
one year in a vacuum, in one Julian year (365.25 days), approximately 9.46 trillion kilometers.

Q.4 (a)

Solid Waste Management:

It is a systematic process of handling waste. Collection through the recovery process upto the disposal.

Methods of Solid waste Management.



1) **Open Dumping:**
   - Open deposition of waste in the surrounding areas.
   - Unsafe ~~and unsca~~ method to deal with the waste.
   - Discouraged Internationally (in Rio Summit)

2) **Compositing:-**
   - Decomposition of waste (biological) in controlled environment
   - As a result of compositing, the waste

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terms into a product called composite (bio-fertilizer)

3) Incineration :-

A costly Method.

Burning of waste by using the incinerator.

4) Land-fill Method.

Un-regulated burying of waste in the land.

Site should be carefully selected.

15-20 meter gap from water table, deserted area, non-fertile area, and should be far away from hospitals.

Q.4 Cd)

i) **Biofuel:**

Derived from the biomass such as animal or plant waste. It is renewable and eco-friendly.

ii) **Adulteration:**

The addition of interior or harmful substances to food or products to increase profit but reducing quality and safety. (Addition of water in Milk).

iii) **Hydrosphere:**

It is the total amount of all water on earth, including liquid, frozen and in gaseous forms. It comprises of oceans, rivers, lakes, groundwater and atmosphere, covering almost 70% of earth's surface.

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iv) **Troposphere.**

The lowest layer of Earth's atmosphere. Almost all weather occurs within this layer.

v) **Isotopes:**

Atoms having the same number of protons but different number of neutrons.

Q4 (a))

Chlorophyll

- Foundation of the food chain, as it helps plants produce food and release oxygen.
- A green pigment found in plants and algae that enables them to perform photosynthesis.
- Located mainly in the chloroplasts of plant cells.
- Converts carbon dioxide and ~~oxygen~~ water into glucose and oxygen, which are essential for life on Earth.
- Absorbs sunlight and converts light energy into chemical energy.

Q4 (b)

Role of Ribosomes in Protein Synthesis

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Ribosomes are organelles found in the cytoplasm.
Known as 'protein factories' of the cell.
Ribosomes read MRNA sequence copied from DNA
Translates the code to link amino acids together in the correct order to form proteins, forming chains.
These chains fold into functional protein necessary for cell growth, repair, and metabolism.

THE END