Dos and Don'ts for Generaral Science & Ability Paper

Hi there, you've done well. Know that acquiring knowledge is one thing and reproducing it in paper acccording 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. :)

$= 31.7\%.$

Therefore, the percentage increase in enrolment in final year is 31.7%

(b) A man is 5 times as old as his son, two years ago. the sum of squares of their ages was 114, Find the present age of son.

Answer: Since the ages of both father and son are unknown. let's assume that their current ages are F and S respectively. Then according to given statement.
$$F = 5S \quad \text{——} \quad ①$$
But 2 years ago
$$\cancel{F^2 + S^2 = 114}$$
$$(F-2)^2 + (S-2)^2 = 114 \rightarrow ②$$
putting the value of F in eq ②
$$(5S-2)^2 + (S-2)^2 = 114$$
~~now using formula~~

now expanding above equation by using formula $(a-b)^2 = a^2 - 2ab + b^2$
$$25S^2 - 20S + 4 + S^2 - 4S + 4 = 114$$
After simplifying whole eq and then rearranging it we get:
$$\frac{26S^2}{2} - \frac{24S}{2} - \frac{106}{2} = \frac{0}{2} \quad \cancel{②} ③$$
$$13S^2 - 12S - 53 = 0 \rightarrow ③$$

- Using quadratic formula
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Here $x = S$ $a = 13$ $b = -12$

$c = -53$

$$S = \frac{-(-12) \pm \sqrt{(-12)^2 - 4(13)(-53)}}{2(13)}$$

$$= \frac{12 \pm \sqrt{144 + 2756}}{26}$$

$$= \frac{12 \pm \sqrt{2900}}{26}$$

The two possibilities that can be derived are:

$S = \frac{12 + 53.8}{26}$ $S = \frac{12 - 53.8}{26}$

$= \frac{65.8}{26}$ $= -\frac{41.8}{26}$

$S \approx 2.5$ $S \approx -1.7$

Since age can not be in negative, the only right answer left is 2.5 yrs.

(C) A man has some hens
- - - -

Answer: Given values :

no. of heads = 48

no. of feet = 140

To find:

no. of hens = ?

Solution:

lets assume no of cows = x
and no. of hens = y

according to given statement total
no. of heads are 48 and
since each cow and hen
has one head:

$$x + y = 48 \rightarrow \text{①}$$

Similarly no. of feet, given
are 140 while each cow
has 4 feet and each hen
has 2 therefore:

$$4x + 2y = 104 = \text{②}$$

dividing eq. ② by 2 we get

$$2x + y = 52 \rightarrow \text{③}$$

no subtracting eq ① from ③

$$\begin{array}{r} 2x + y = 52 \\ -x \pm y = \pm 48 \\ \hline x + 0 = 4 \end{array}$$

$$x = 4$$

putting value of x in eq ①

$$4 + y = 48$$

$$y = 48 - 4 \Rightarrow y = 44$$

Hence the man has 44 hens.

(d) A runs at a speed of ---

Answer: Given values:

S_1 = Speed during 1st half of journey = 40 km/h

S_2 = speed during 2nd half = 60 Km/h

To find: average speed = S_{avg} = ?

Solution:

The average speed can be found by using formula:

$$\text{average} = \frac{\text{sum of all values}}{\text{total no. of values}}$$

$$S_{avg} = \frac{S_1 + S_2}{2}$$

$$= \frac{40+60}{2}$$

$$= \frac{100}{2}$$

$$S_{avg} = 50 \text{ km/h}$$

The average speed during whole journey was 50 km/h.

Q#7 (a) A numbe is divided by 6 and added with 50. If the total is 60. Find the number =

Answer:

Given values.

Let's assume the number is x. Then, according to given statement if x is first divided by 6 and then added into 50 we will get 60 which means:

$$x \div 6 + 50 = 60$$
$$x \div 6 = 60 - 5$$
$$\frac{x}{6} + 50 = 60$$

rearranging above equations by moving numbers to one side and keeping variable on other:

$$\frac{x}{6} = 60 - 50$$
$$6 \times \frac{x}{6} = 10 \times 6$$
$$x = 60$$

The original number was 60.

(b) Find the odd one out :
8, 16, 24, 34, 40, 48

Answer:

Looking closely at given series it appears the numbers follow a pattern of multiples of 8 in order of 1 to 6 as:

$$8 \times 1 = 8$$
$$8 \times 2 = 16$$
$$8 \times 3 = 24$$
$$8 \times 4 = 32$$
$$8 \times 5 = 40$$
$$8 \times 6 = 48$$

Comparing this pattern with given series reveals that 36 is the odd one out as it is not a multiple of 8.

(C) A tower is 15 m tall ---

Answer:

Given values:
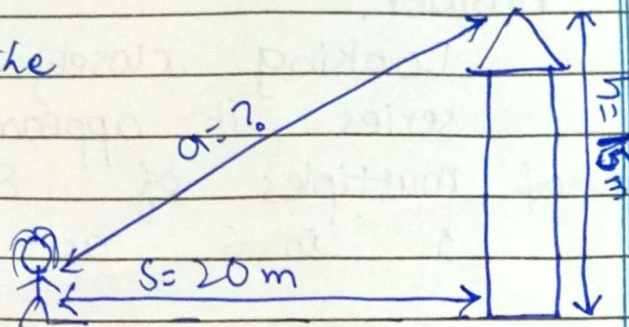height of tower = h = 15 m
distance from base = S = 20

To find: Aerial distance = a = ?

Solution:

considering the position of person and all the measurements

given we get a shape similar to right angled triangle.
Therefore we can apply pethagorean theorem to this situation.

According to Pathagorean theorem.

$$(Hyp)^2 = (Base)^2 + (Height)^2$$

here Hyp = a, Base = s &
Height = h

$$(a)^2 = (S)^2 + (h)^2$$
$$(a)^2 = (20)^2 + (15)^2$$
$$(a)^2 = 400 + 225$$
$$a = \sqrt{625}$$
$$a = 25 \text{ m}$$

The aerial distance from top of tower would be 25m.

(d) In a hotel the tarrif for every odd dates ---

$\Rightarrow$ I cann't solve it. Can you please attach its solution with my file?

Answer:

Given values:

tarrif for odd dates = 1000
tarrif for even dates = 2000
Total payment made = 30,000

To find:

No. of days he = ?
stayed

Solution.

If actual payment is x then payment made on even dates is twice payed on odd dates ~~$2x + 1000$~~

~~payment made on even~~ ~~dates = 10,000~~ $x + 2x = 30000 \rightarrow$ ①

Now let's assume the no. of odd dates he stayed in hotel is a and no of even dates is b.

then $a = x$ and $b = 2x$

solving eq. ①

$$\frac{3x}{3} = \frac{30000}{3}$$

$x = 10000$

now the payment he made for each kind of dates is

(SECTION -I)

Q#2 (a): Define the term malnutrition. write major causes and consequences of malnutrition.

Answer:

Definition: "A condition in which improper amount of nutreints are available to human body."

This improper amount can be either lack of nutrients availability needed for proper functioning of human body or excessive amount i.e more than needed.

Causes : Add proper info

① Inappropriate dietary choices: Unhealth food choices or unbalanced diet with increased amount of one nutrient and not taking other at all can cause malnutrition.

② Low income: Children during growing age need a balanced amount to grow well. Households with low income are unable to provide this balanced diet causing children to become malnutrient.
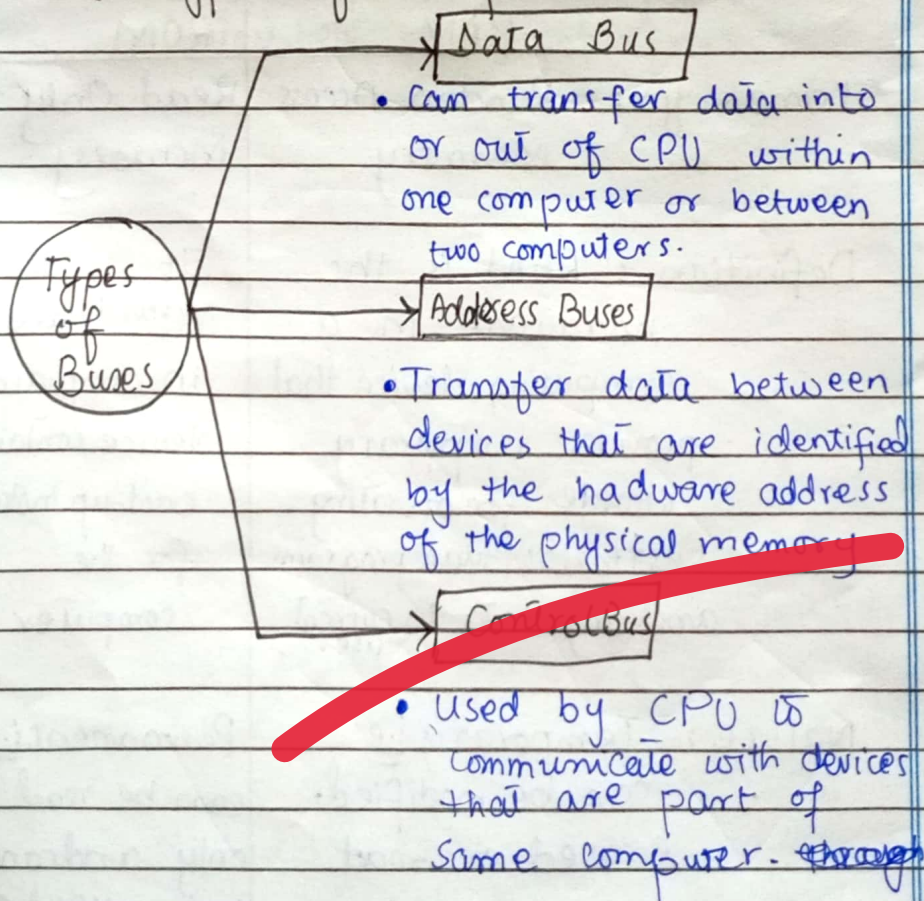
(C) What are computer buses differentiate between RAM & ROM.

Answer:

Computer buses:

Computer buses are a computer component used to transfer data between other components of computer. A bus consist of many parraller lines with each line having carrying capacity of 1 bit.

(a) Types of Computer buses

Data Bus
- Can transfer data into or out of CPU within one computer or between two computers.

Types of Buses

Address Buses
- Transfer data between devices that are identified by the hadware address of the physical memory

Control Bus
- Used by CPU to communicate with devices that are part of same computer. through

Concequences of malnutrition:

① Weight loss:

Due to malnutrition a person starts loosing weight drastically.

② Loss of appetite:

A malnutrient person losses his apetite and does not feel hungry even if he does not eat for whole day.

③ fatigue and tiredness:

A malnutrient person always feels tired and cannot concentrate on anything properly.

④ weaker immune system:

A ~~malnutrient~~ person suffering from this condition has a weaker immune system making him prone to falling sick like catching cold easily and inability for wounds to heal quickly.

(b) Differentiate b/w food contamination & adulteration?

Answer: Food contamination and adultration can be differentiated on following bases.

① Definition.

Food Contamination	Food Adultration
It refers to presence of harmful substances into food that may cause health risk	It refers to deliberate addition of harmful or prohibited substances to food.

② Nature

Food contamination	Food adultration
It is accidental and often due to improper handling storage or hygiene.	It is deliberate and done with intent to decieve customers and increase profit.

③ Source

Food contamination	Food adultration.
It can be cause by poor sterillization of tools used, contaminated air.	Adding chemicals to food or removing useful nutrient from food by manufacturers or processors.

④ Health Risks

Food Contamination	Food adultration.
Food contamination often results in food borne illnesses or toxic effects	It may cause health issues due to toxic substances or deficiency of nutrients.

⑤ Intent

Food contamination	Food Adultration
It is unintentional and accidental	It is intentional and motivated by economic or fraudulent purposes.

⇒ Example of Food contamination and adultration:

- Presence of E. coli in vegetables due to improper washing is contamination.
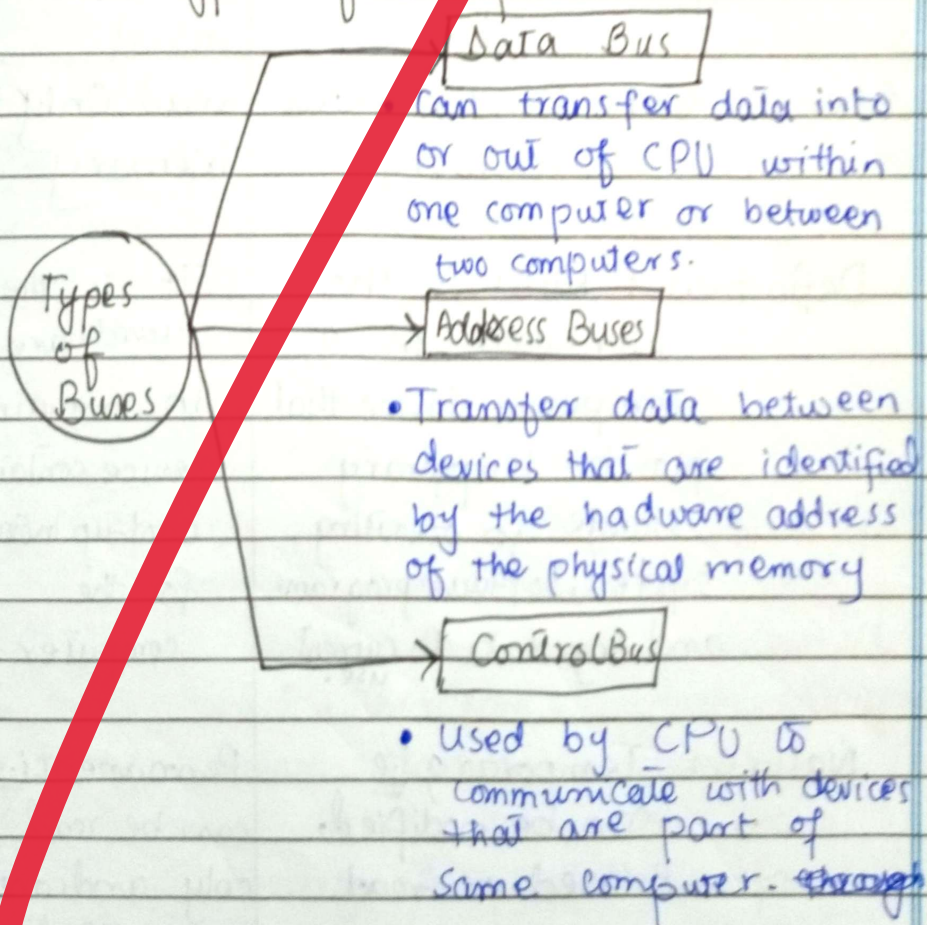- Mixing milk with water is an example of adulteration.

(C) What are computer buses differentiate between RAM & ROM.
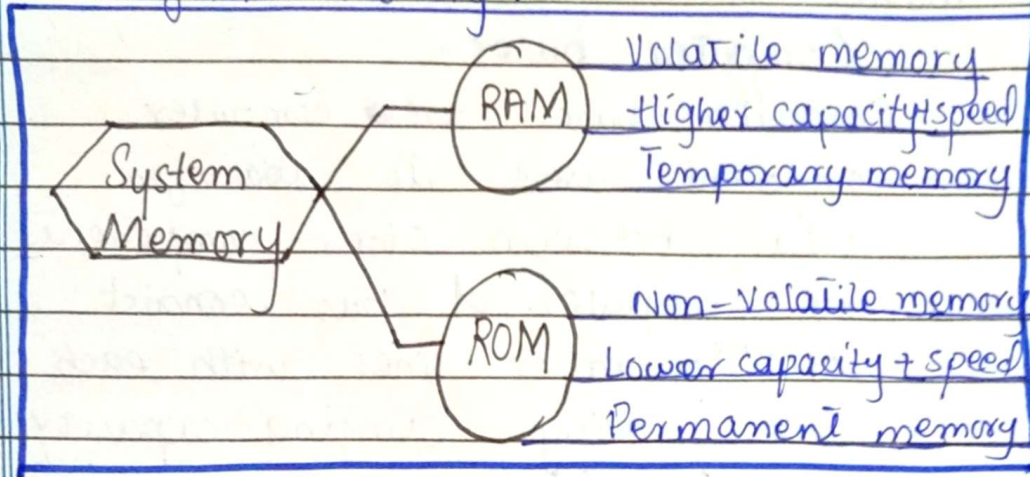
Answer:

Computer buses:

Computer buses are a computer component used to transfer data between other components of computer. A bus consist of many parraller lines with each line having carrying capacity of 1 bit.

(a) Types of Computer buses

Types of Buses

Data Bus

Can transfer data into or out of CPU within one computer or between two computers.

Address Buses

• Transfer data between devices that are identified by the hadware address of the physical memory

ControlBus

• Used by CPU to communicate with devices that are part of same computer.

Difference between RAM and ROM:

RAM and ROM are two types of system memory.

System Memory → RAM: Volatile memory, Higher capacity+speed, Temporary memory

System Memory → ROM: Non-volatile memory, Lower capacity + speed, Permanent memory

Following are the major differences between RAM & ROM:

	RAM	ROM
Stands for:	Random Access Memory	Read Only Memory
Definition:	RAM is the hardware in a computing device that provides temporary storage for operating system, software programs and any data in current use.	It is the hardware in computing device containing boot-up instructions for the computer.
Nature:	Temporary i.e can be modified, erased or read.	Permanent i.e can be read only and cannot be modified or erased.

use :	Used by CPU in ~~different~~ to process ~~tasks~~ current instructions	used by to bootstrap the computer
Volatility:	Data of RAM is very volatile, it will ~~remain~~ be lost if there is interruption of power.	It is non-volatile. remain saved even after interruption of power

___

(d) What are geo-stationary satellites? Distinguish natural & artificial satellites, how many artificial satellites of Jupiter are there?

Answer:

Geo-Stationary satellites:

① Definition:

Satellites that orbit at an altitude of 36,000 km with such a speed that it takes 24 hrs to complete one ~~rotation~~ orbit. Since this time is equal to Earth's rotational period therefore, these satellites appear stationary from earth and hence the name geo-stationary. The whole surface of earth can be covered using 3

geo-stationary satellites. Each covers a ~~teu~~ longitude of 120°.

Orbital speed of geo-stationary satellite:

The orbital speed of geo-stationary satellite is 11,000 km/h.

Difference between ~~Orbital~~ Artificial v/s Natural Satellite:

Satellites are the objects that revolve around planets or any another object. There are two different Types of satellites; Artificial and Natural Satellite. These two Types differ on following basis:

① A Natural satellites exist naturaly in space while artificial satelites are human built objects launched into orbits using rockets.

② An Artificial satellite is designed for a specific purpose like communication, weather monitoring navigation and research e.t.c while a natural

has no specific purpose and exist solely due to gravitational force.

(3) Examples of natural satellites include moon's orbiting planets while that of Artificial satellites are GPS, ~~satellite~~ Hubble space et.c.

No. of Artificial satellites of Jupiter:

Jupiter has no artifical satellite orbiting around it.