

Dos and Don'ts for General Science & Ability Paper

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 2 sides (not more than that) 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. :)

(b)

Data

radius of circle = $r = 4\text{cm}$

$\pi = 3.14$

Find

Solution

Circumference = $2\pi r$

$$= 2(4)(3.14)$$

circumference of circle = 25.22 cm

$$\begin{array}{r} 13 \\ 314 \\ \hline 2522 \end{array}$$

(c)

Mean

sum of all numbers
Total numbers

$$= \frac{20+22+21+21+23}{5}$$

$$= \frac{107}{5}$$

Mean = 21.4

$$\begin{array}{r} 20 \\ 22 \\ 21 \\ 21 \\ 23 \\ \hline 107 \end{array}$$

$$\begin{array}{r} 21.4 \\ 5 \overline{)107} \\ \underline{10} \\ 7 \\ \underline{5} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

Median

20, 22, 21, 21, 23

Re-arranging

20, 21, 21, 22, 23

Median = 21

center-most number

Mode

20, 22, 21, 21, 23

Mode = 21

repeating number

Range

20, 22, 21, 21, 23

Range = highest number - lowest number

$$= 23 - 20$$

Range = 3

(d)

Data:-

$$\text{Tahir's investment} = 15,000 \times 12 \text{ months} \\ = 180,000$$

$$\text{Umar's investment} = 30,000 \times 7 \text{ months} \\ = 210,000$$

$$\text{Usman's investment} = 45,000 \times 4 \text{ months} \\ = 180,000$$

$$\text{Total profit} = 406,000$$

Find:-

Share of each?

Solution:-

$$\text{Total investment} = 180,000 + 210,000 + 180,000 \\ = 570,000$$

$$\text{Tahir's Share} = \frac{\text{Tahir's investment}}{\text{Total investment}} \times \text{total profit}$$

$$= \frac{180,000}{570,000} \times 406,000$$

$$= 0.315789 \times 406,000$$

Tahir, 128,210.334 Rs

$$\text{Umar's share} = \frac{7}{570000} \times 406,000$$

$$= 0.368421 \times 406,000$$

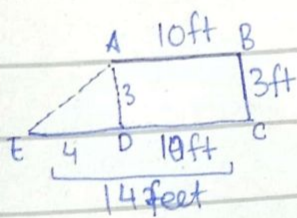
$$\text{Umar} = 149,578.926 \text{ Rs}$$

$$\text{Usman share} = \frac{6}{570000} \times 406,000$$

$$\text{Usman} = 128,210.334 \text{ Rs}$$

QUESTION-8

(c)



According to Pythagoras theorem

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

$$(\text{hypo})^2 = (3)^2 + (4)^2$$

$$(\text{hypo})^2 = 9 + 16$$

$$(\text{hypo})^2 = 25$$

Taking square root on both sides

$$\sqrt{(\text{hypo})^2} = \sqrt{25}$$

$$\boxed{AE = \text{hypo} = 5 \text{ feet}}$$

Naseer is 5 feet away from Point A

(d)

Data:

Average temperature of week = 33°C

Average temp. of 1st three days = 30°C

Average temp of three last days = 35°C

Find:

Temperature on 4th day = ?

Solution

$$\begin{aligned} \text{Sum of avg. temp. of week} &= 33 \times 7 \\ &= 231^\circ\text{C} \end{aligned}$$

$$\begin{array}{r} 233 \\ - 7 \\ \hline 231 \end{array}$$

$$\begin{aligned} \text{Sum of avg. temp. of 3 days} &= 30 \times 3 \\ &= 90^\circ\text{C} \end{aligned}$$

$$\begin{array}{r} 135 \\ - 40 \\ \hline 95 \end{array}$$

$$\begin{aligned} \text{Sum of avg. temp. of last 3 days} &= 35 \times 3 \\ &= 105^\circ\text{C} \end{aligned}$$

$$\begin{array}{r} 105 \\ - 90 \\ \hline 15 \end{array}$$

Temp. on 4th July = 231 - 195
= **36°C** Ans

$$\begin{array}{r} 231 \\ -195 \\ \hline 36 \end{array}$$

(b)

^{v2}1, ^{v3}2, 6, 21, _____

$$(1 \times 1) + 1 = 2$$

$$(2 \times 2) + 2 = 6$$

$$(6 \times 3) + 3 = 21$$

$$(21 \times 4) + 4 \Rightarrow 84 + 4$$

88 Ans

$$\begin{array}{r} 1 \times 2 = 2 \\ 2 \times 2 = 6 \\ 6 \times 3 = 21 \end{array}$$

$$\frac{21 \times 4}{4} = 84$$

$$\begin{array}{l} (1 \times 1) + 1 = 2 \\ (2 \times 2) + 2 = 6 \\ (6 \times 3) + 3 = 21 \end{array}$$

$$21 \times 4$$

$$\frac{21 \times 4}{4} = 84$$

(a)

^AB ^QR ^NS ^GD ^Q
BROTHER
^QD ^GS ^NQ ^A

^RH ^RS ^PQ
SISTER → **QDSRHR**

SECTION-I

QUESTION-2

(a)

Global warming is a global threat as the temperature of earth is increasing day by day, which is not a good sign. Following are the measures that should be taken to counter it in COP-29 occurred in Baku, Azerbaijan:

1. Promotion of Renewable energy sources.
2. Promotion of Afforestation
3. Limit the combustion of fossil fuel.
4. Promotion of Reforestation
5. Public Awareness about global warming.
6. All countries should be motivated to actively participated in attaining sustainable development Goals (SDG)
7. Strict rules are now required for environmental degradation.
8. Making and implementing new policies

Address all parts of your question

If these measures are taken and enforced properly, the effect of global warming could be mitigate.

(b)

Arteries:-

Arteries are a type of blood vessels. It carry oxygenated blood except pulmonary arteries. It carry blood from heart towards the whole body. Add diagrams

Veins:

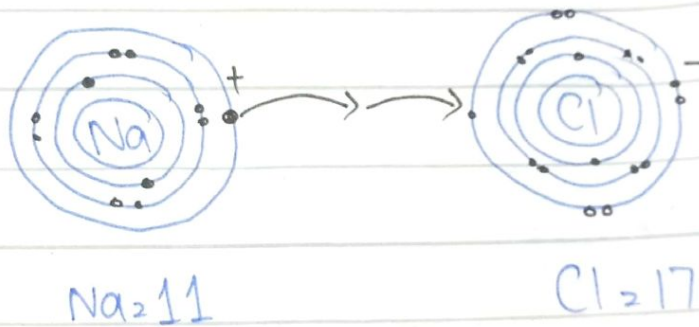
Veins are also a type of blood vessels. It carries deoxygenated blood except pulmonary vein. It carries the deoxygenated blood from the body towards the heart.

Capillaries:

Capillaries carry both oxygenated and de-oxygenated blood. It function is blood transfusion and transfer of nutrients.

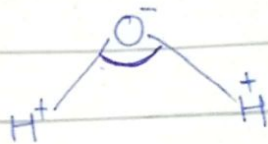
(c)

Atoms form bond to attain stability. An atom attains stability when the electrons in its outermost shell has two or eight electrons also known as octet rule. When the atoms achieve or fall in the criteria of octet rule, it is considered stable. For example, Na (sodium) has 1 electron in its valence shell where Chlorine (Cl) has 7 electrons in its valence shell. To achieve stability Na donate its electron and by this procedure both get eight electrons in its valence shell, by making ionic bond with each other



Structure of water

Formula of water is H_2O . It is formed by bond between one oxygen atom and two hydrogen atom. Oxygen form angular structure with hydrogen



(d)

Conductors:-

Conductors are those material from which electricity can be passed. For example Aluminium

Semi conductors:-

Semi-conductors are in between conductors and insulators. For example Silicon

Metals:-

Metals are those materials

that are lustrous, malleable and have conductivity. For example Gold

Plastics:-

Plastics are polymers that can be moulded into any shape. For example Polythelene

Ceramics:-

Ceramics are inorganic, non-metallic and non-conductive. For example Glass, Tile.

QUESTION-4

(a)

Renewable energy is a dire need for a country like Pakistan who is in a constant state of energy deficit. The list of available sources of renewable energy in

Pakistan is given below:-

1. Solar energy
2. Wind energy
3. Hydro-power energy
4. Nuclear energy

Here are some of the policy options that should be adopted to utilize these sources to overcome the present energy crisis

1. Government should provide subsidies and encourage the installation of solar plate by reducing rates
2. Government should allocate an annual budget from GDP for building of Dams in order to promote hydro-power projects
3. Government should make policies in order to co-operate with other

countries to enhance the role of nuclear energy. France is making 70% of its electricity from nuclear energy.

4. Government should install solar modules on national level. According to UN, if Pakistan use its 0.071% area for solar energy it can make sufficient energy to meet its requirements.

(b)

The structure of Sun is divided into three zones:-

- i) The Core
- ii) The Radiative Zone
- iii) The Convective Zone

Core:-

Core is the inner most part of Sun. It is the place where fusion

reaction takes place. These making and breaking of atoms release a large amount of energy in the form of heat and light. Energy from the core then enters into the radiative zone.

Radiative zone:-

From the core, heat energy in the form of radiations moves into the radiative zone and scattered in all direction. Radiative zone is even hotter than the core.

Convective zone:-

Convective zone is the outermost part of the Sun. As we move upward, the temperature increase and hence the convective zone is hottest among all the layers of the Sun.

Add
diag
ram
s

(C)

Ceramic material is inorganic and non-metallic in nature. They are also non-conductile, i.e. poor conductors of electricity.

Is it possible that ceramics can be recycled?

Ceramics can be recycled as it is crushed into small pieces and can be used in the construction of roads. But due to its high melting point, it is sometimes very difficult to recycle the ceramics.

Properly explain stuff

Ceramics like glass and tiles can be crushed in various landfills, to fill space. Ceramics made of clay are also easy to recycle.

(d)

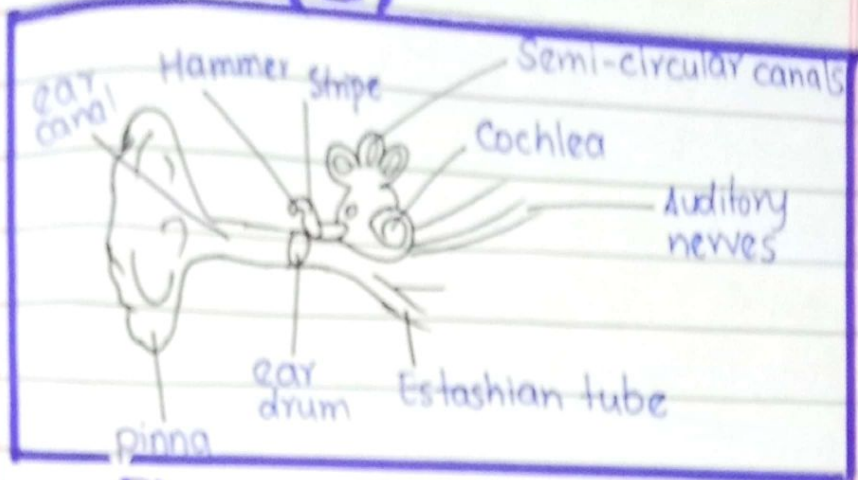


Figure:- Structure of human Ear

Human ear consist of three parts:-

- i) Outer Ear
- ii) Middle Ear
- iii) Inner Ear

Outer Ear:-

In the outer most part of ear, there lies pinna. Sounds that are from the source, enter into ear canal also known as auditory canal.

Middle Ear:-

In the inner ear, there lies ear drums. Sounds after striking

with eardrum convert into waves causing vibration in eardrum. The bones of ear Malleus, Incus and stapes also lies here. Eustachian tube originate from here which help in maintenance of internal and external pressure of the ear.

Inner ear:-

Cochlea lies in the inner ear which help in hearing. Waves from eardrum are transferred towards cochlea where these waves tranform into electrical signal and are directed towards brain through auditory nerve. Semi-circular fluid is also present here which help in maintaining balance of the body.

The End