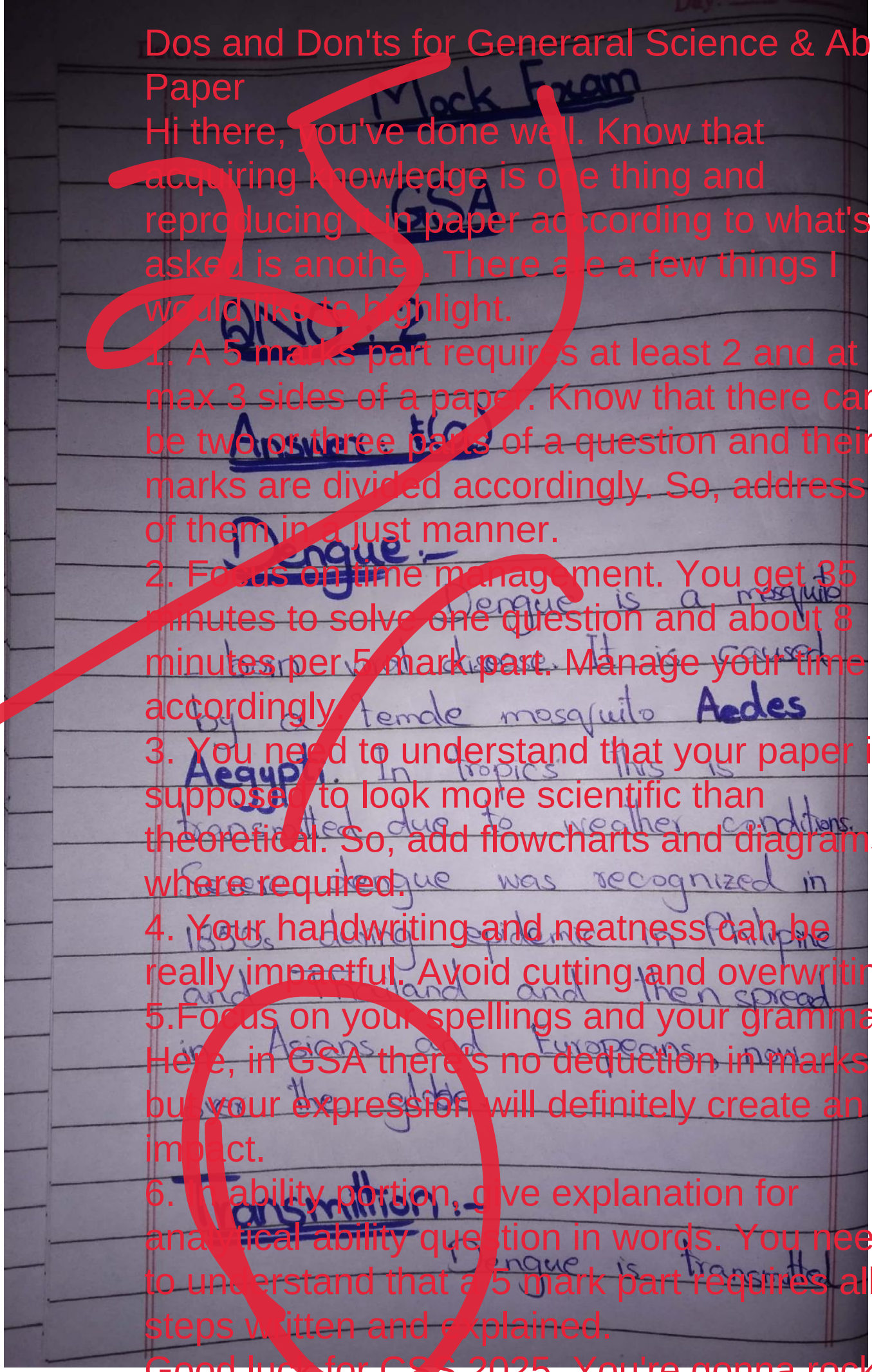


Dos and Don'ts for Generaral Science & Ability Paper

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

Date: Day:

by bite of infected Aedes Aegyptia which is main vector of dengue. After incubation of 4-10 days virus starts to transmit in the life. An infected individual also transmit disease when an un-infected mosquito bites him and carry virus. This mosquito live in urban areas and breed in man-made containers. Its feeding time is early in the morning and in the evening before dusk.

Symptoms:-

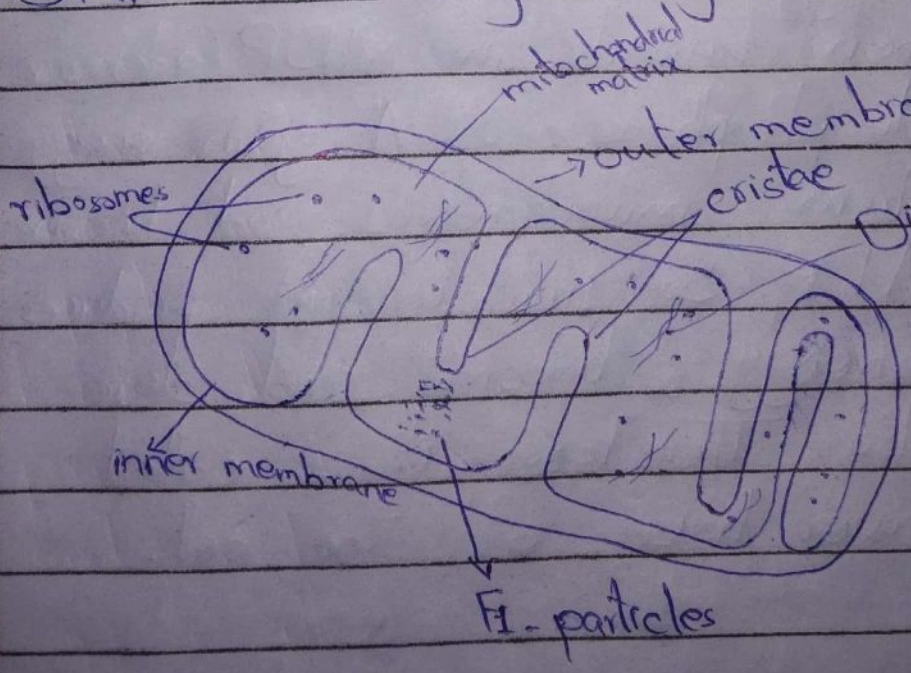
Dengue is a flue-like illness. If fever is 40°C or 104°F then it is dengue fever have symptoms like headache, pain behind the eyes, muscle and joint pain, vomiting, anxiety, swallon glands and rashes. These symptoms appear after incubation period (4-10 days) and last for 2-7

Add early, critical and recovery symptoms

It manufacture and transmit energy to the cell so it is called power house of the cell.

Structure :-

Mitochondria is a rod, vesicle or filament shaped double membrane-bound organelle. Outer membrane is smooth and inner membrane form many infoldings called **cristae**. Inside the inner membrane is matrix and knob like particles called F_1-particles. Mitochondrial matrix contains ribosomes, DNA and many enzymes.



Date: Day:

Mitochondria is a self-replicating organelle. New mitochondria are formed by old one.

Functions :-

Many metabolic process occur in mitochondria like Krebs cycle, aerobic respiration and fat metabolism. The energy released da from organic food break-down during metabolism transmit to energy rich ATP molecules called adenosin tri-phosphate. These ATP supply energy to cell on demand and then convert int ADP (adenosine di-phosphate. ADA gains energy from mitochondria and become ATP. So mitochondria produces energy, transmit and store also. Therefore it is called power house of the cell.

Date: Day:

Ans: (d)

Covalent Bond :-

A bond that is formed by the sharing of electron pair between two atoms is called covalent bond.

Types :-

There are three types of covalent bond.

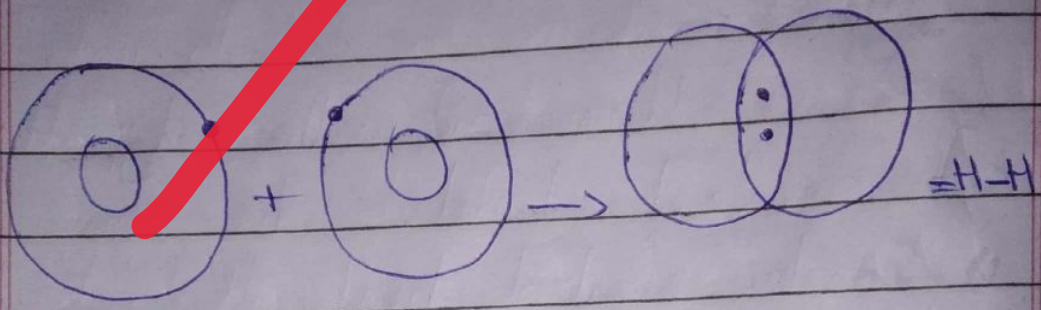
1) Single covalent bond
2) Double covalent bond
3) Tripple covalent bond.

Single Covalent Bond :-

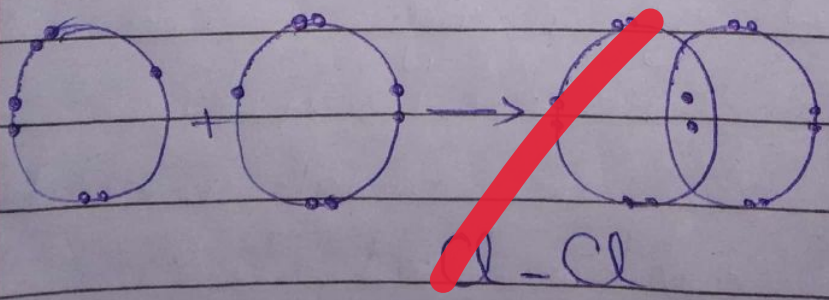
The bond that is formed by sharing of one electron pairs between two (non-metal) non-metals is called single covalent bond. It is denoted by single line between two atoms. For example hydrogen

Date: Day:

gas, two atoms join by sharing electron pair. It is a diatomic molecule. It shares one electron pair to gain the nearest atomic configuration of nobel gases and is denoted as H–H.

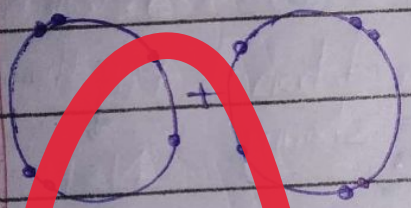


Similarly chlorine has seven electrons in valence shell but one electron pair take part in bonding and three are lone pair of electrons.



Double Covalent Bond :-

A bond that is formed by sharing of two electron pairs between two atoms is called double covalent bond. It is denoted by double lines. For example Oxygen has six electrons in valence shell and form double covalent bond by sharing two electron pair.

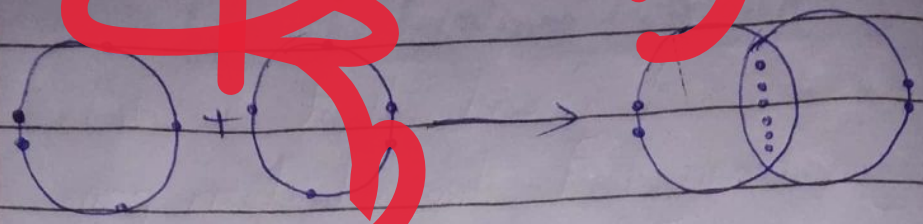


O=O

Tripple Covalent Bond :-

The bond that is formed by sharing of three electron pairs between two atoms is called tripple covalent bond. It is denoted by three lines. For example in Nitrogen gas.

Date: Day:



N≡N

Covalent Bond

sharing electron pair

Single covalent bond (–) (=) Double covalent bond (≡) Tripple covalent bond

Sharing one electron pair

H–H, Cl–Cl

two electron pairs sharing

O=O

3 electron pair sharing

N≡N

Question NO: 3

Ans (a)

Lunar Eclipse :-

(When) Earth revolves around the sun and moon

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revolves around the earth. During revolving when earth comes between the sun and moon and form a syzygy, it is called lunar eclipse. The earth obstruct the sun rays that reflect by moon and it becomes illuminated and make a shadow on the moon. Earth forms a conical shadow, its darker portion is called **umbra** and less or partial dark portion is called **penumbra** region. Lunar eclipse occur when moon is full and lasts for few hours and easily can be seen at night on earth.

Types

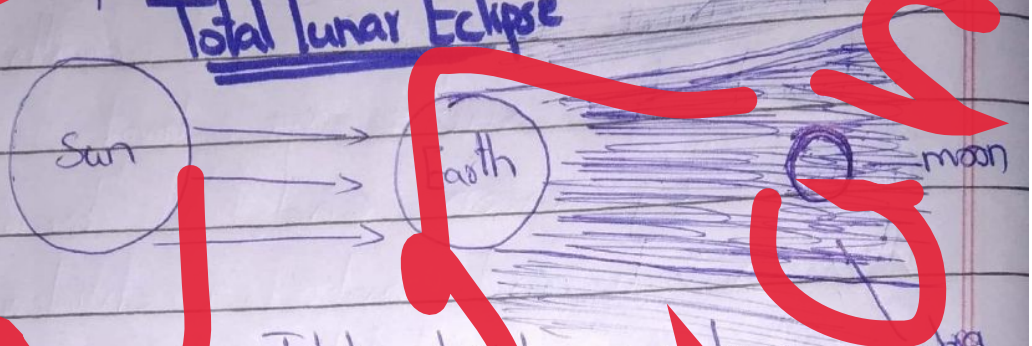
Penumbral Lunar Eclipse :-

When moon pases thrugh the pnumbra region of earth

Date: Day:

shadow and is not totaly shown by different coloured lights it is called preumbral lunar eclipse.

Total lunar Eclipse



Total lunar eclipse
In this eclipse moon pases through the umbra region of earth's shadow and it is called bloody moon.

Partial Lunar Eclipse :-

When some portion of moon body pases in umbra region and rest in preumbra region it is called partial lunar eclipse.

Ans (b)

Enzymes:-

Enzymes are organic polymer of amino acid that act as a catalyst to regulate speed of different chemical process in the metabolism of living organism. They are protein in nature.

Functions:-

One enzyme catalyse only one chemical reaction. Enzymes help in metabolic processes like digestion and respiration. Enzymes regulate the hormone secretion, blood clotting, help in healing of wounds. Some enzymes control the toxic invaders and micro-organisms.

Amylase:- Help in digestion of carbohydrates.

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Lipase: Help in break-down and digestion of lipids and fats.

Pepsin / Trypsin:- Influence the protein break-down into amino acids.

Urease: Break-down of urea.

Kinase and Phosphatase

They help in desolution and stimulation of plant cell

Protein Myolin:-

help in muscle contraction.

Abscic Acid:-

Inhibits plant growth.

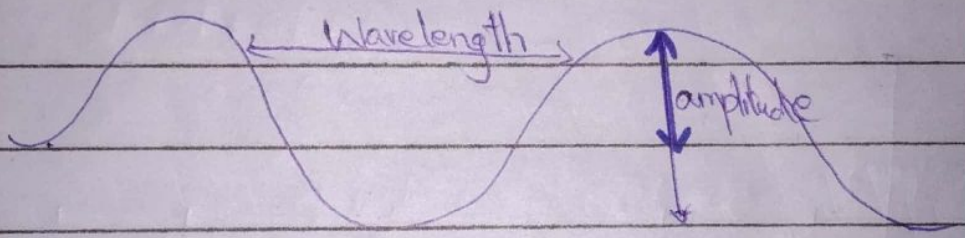
Ans (c)

Electromagnetic Radiations:-

The light rays present around us are called electromagnetic radiations like visible light, microwaves, radio.

Date: _____ Day: _____

waves, X-rays and gamma rays etc. The visible portion is small in electromegnetic spectrum have broader range of electro-magnetic wavelengths. Electromagnetic radiations have wavelength, amplitude and frequency.



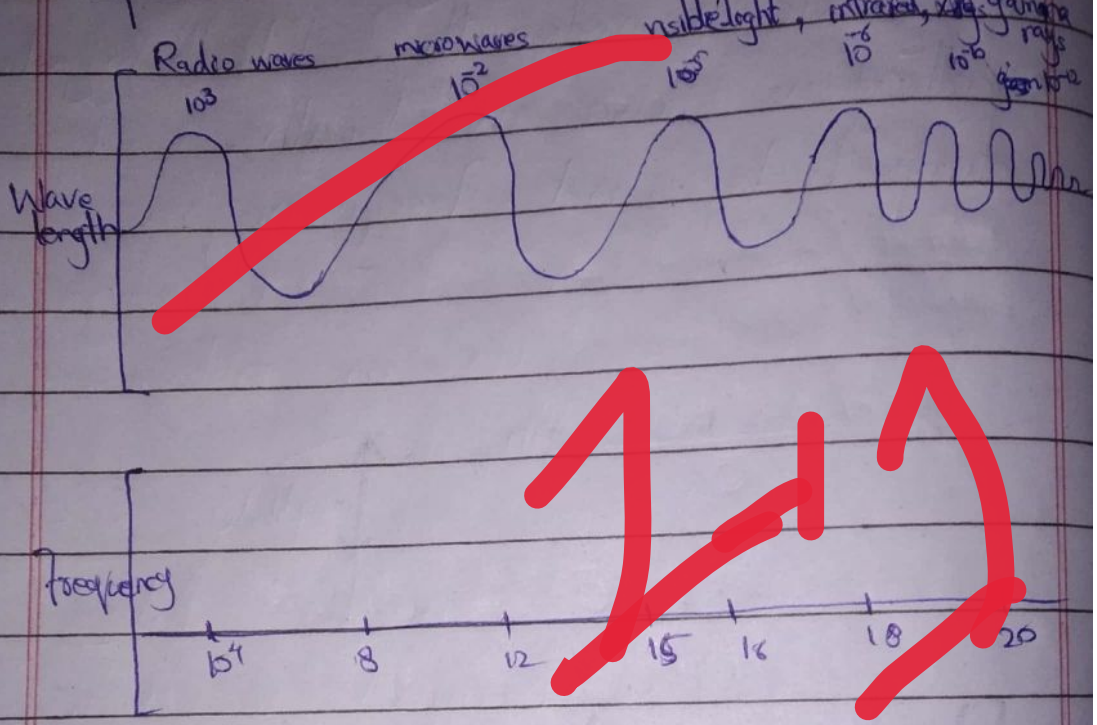
Electromagnetic Spectrum :-

Electromagnetic radiations having variations in frequency and wavelength during oscillations form a region called electro-megnetic spectrum as frequency increases and wavelength decrease. Radio waves, microwaves, visible

Day:

Date:

light, infrared radiations, X-rays and gamma rays. This array form electromegnetic spectrum.



Ans: (d)

Earthquakes :-

The sudden release of energy in the form of seismic waves causing abrupt shaking of earth surface by movement of tectonic

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plates is called earthquakes.

Volcanic erruption:-

The release of energy in the form of lava on the earth surface is called volcanic erruption.

Earthquakes and volcanic erruption both are inter-connected as both create rift on the earth surface. In both case energy is released. Both are too much destructive and cause huge loss. Earthquake is result of movement of tectonic plates. Volcano is caused when hot molten liquid magma comes out on the earth surface in the form of lava and create vents on earth surface.

Date: Day:

Section - II

Question NO : 6

Answer(a)

Value of K = ?

$$\text{arithmatic mean} = \frac{\text{sum of numbers}}{\text{total numbers}}$$

$$15 = \frac{9 + 8 + 10 + K + 12}{5}$$

$$5 \times 15 = 39 + K$$

$$75 = 39 + K$$

$$75 - 39 = K$$

K. 36 Ans

Ans (b)

Sugar soln : colored Water

$4x : 3x$

if 10L colored water added

$3x + 10 \rightarrow (1)$

Then ration

$4x : 5x$

$4x \times (3x + 10) = 4x \times 5x$

$12x + 40 = 20x$

$40 = 20x - 12x$

$40 = 8x$

$x = \frac{40}{8} = 5$

(Putting in eq(1))

$= 3x + 10$

$= 3(5$

Quantity of Sugar Soln $= 4 \times 10 = 40L$

(c)

Radius of football = 12cm

Volume of football = ?

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

$$= \frac{4}{3} \times \frac{22}{7} \times (12)^3$$

$$= \frac{4}{3} \times \frac{22}{7} \times 1728$$

$$= \frac{152064}{21}$$

$$V = 7241.14 \text{ cm}^3$$

QNO: 7

(a)

if 20% of $x = y$ then

Y% of 20 is

$$\frac{20}{100_5} \times x = y$$

$$\frac{x}{5} = y \rightarrow (1)$$

Y% × 20

$$= \frac{Y}{100} \times 20$$

By putting value of 'y' in eq(1)

$$= \frac{x}{5} \times \frac{1}{100_{25}} \times 20^{4}$$

$$= \frac{x}{25}$$

In %age

$$= \frac{x}{25} \times 100^{4}$$

$= 4\%$ of x

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(b)

$P+Q = 5050 \times 2 = 11100 \rightarrow (1)$

$Q+R = 6250 \times 2 = 12500 \rightarrow (2)$

$P+R = 5200 \times 2 = 10400 \rightarrow (3)$

eq(1) + eq(2) + eq(3)

(11100 + 10400)

$(P+Q) + (P+R) + (Q+R) = 11100 + 10400 + 12500$

$2P+2Q+2R = 33000$

$2(P+Q+R) = 33000$

$P+Q+R = \frac{33000}{2} = 16500$

$P+Q+R = 16500 \rightarrow (4)$

eq(4) - eq(2)

$P+Q+R-(Q+R) = 16500-12500$

$P+Q+R-Q-R = 4000$

$P = 4000$

(c)

Tossed events = 500

TE_1 = H-H = 105

TE_2 = H = 275

TE_3 = no head = 120

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$PE = \frac{\text{value of event}}{\text{total number}}$

$P(E_1) = \frac{105}{500} = \frac{21}{100} = 0.21$

$P(E_2) = \frac{275}{500} = \frac{55}{100}$

$= 0.55$

$P(E_3) = \frac{120}{500} = \frac{24}{100}$

$= 0.24$

(d)

Father = 4 Son

$7 = 4S$

$7 + 14 = 2(S + 14)$

$4S + 14 = 2S + 28$

$4S - 2S = 28 - 14$

$2S = 14$

$S = \frac{14}{2} = 7$

$7 = 4S$

$7 = 4 \times 7 = 28$

Sum of present age of father and son = $28 + 7 = 35$