

Section - II

Q. No. 8

Part A

Part B :-

probability of finding 8 =

By using formula:-

$$P(E) = \frac{\text{number of outcomes in event}}{\text{total no. of possible outcomes}}$$

$$P(E) = \frac{n(E)}{n(S)}$$

here E is event.

P is probability.

$$\text{Probability of even (8)} = \frac{1}{12}$$

② probability of even no.

As there are only 12 cards numbered

as 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

There are 6 even no.

So by using the formula we find the probability of even no.

$$P(\bar{E}) = \frac{6^1}{12} = \frac{1}{2}$$

So probability of even no is $\frac{1}{2}$

③ A perfect square

In given number cards there are only two perfect square (4, 9).

So by using the probability formula we can get the probability of getting perfect square cards.

$$P(E) = \frac{2}{12} = \frac{1}{6}$$

$$P(E) = \frac{1}{6}$$

④ A negative no

There is no any negative no in list.

So there probability will be

$$P(E) = \frac{0}{12} = 0$$

$$P(E) = 0$$

④ A number less than 13.

As per condition all cards are less than 13.

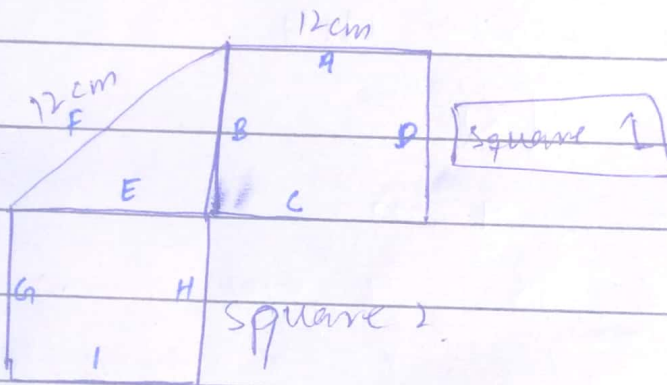
So.

$$P(12) = \frac{12}{12} = 1.$$

$$P(12) = 1.$$

Part C

Look at the shape.



As all sides of a square are equal so its perimeter will be.

$$\begin{aligned} \text{Perimeter} &= A + B + C + D \\ &= (12 + 12 + 12 + 12) \text{ cm.} \end{aligned}$$

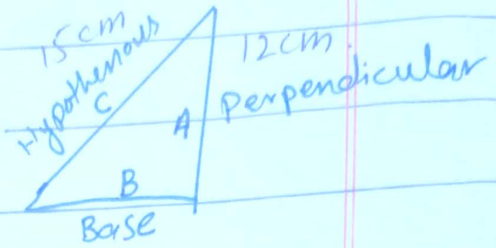
$$P = 48 \text{ cm.}$$

Triangle

Triangle base is missing so by ~~Parsi~~ applying Pythagoras theorem

we can find it.

$$C^2 = A^2 + B^2$$



So by putting values.

$$(15)^2 = (12)^2 + (B)^2$$

$$(15)^2 - (12)^2 = (B)^2$$

by taking square root of the both side we get.

$$\begin{aligned} \sqrt{(B)^2} &= \sqrt{(15)^2 - (12)^2} \\ &= \sqrt{225 - 144} \\ &= \sqrt{81} \end{aligned}$$

$$B = 9 \text{ cm.}$$

So base is 9 cm.

So perimeter of a triangle will be.

$$\text{Perimeter of Triangle} = A + B + C$$

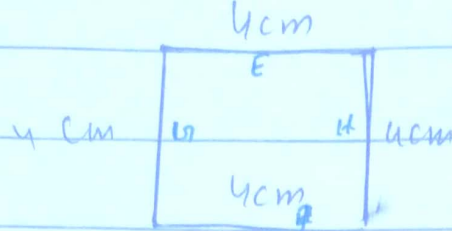
$$= 12 + 9 + 15$$

$$= 36 \text{ cm.}$$

③ Third shape

As third shape is also a square its all side are equal in length.

So.



$$\text{Perimeter of Square 2} = E + G + H + I$$

$$\boxed{\text{"} = 16 \text{ cm}}$$

Perimeter of The given shape ~~is~~

Perimeter of Square 1 + triangle + Square 2

$$\text{"} = 48 \text{ cm} + 36 \text{ cm} + 16 \text{ cm}$$

$$\boxed{\text{"} = 90 \text{ cm}} \text{ Answer } \textcircled{1}$$

Area of given shape

First of all to find the total area given shape we will find the area of All shape separately then we sum the area in order to find total area.

Area of square 1 :-

By using formula.

$$\text{Area} = a \times a$$

$a =$ side of square so

$$\text{Area} = 12 \times 12$$

$$\boxed{\text{Area} = 144 \text{ cm}^2}$$

② Area of Square 2

$$- A = (9 \times 9) \text{ cm}$$

$$A = (4 \times 4) \text{ cm}$$

$$\boxed{A = 16 \text{ cm}^2}$$

③ Area of triangle

$$A = \frac{1}{2} (b \times h)$$

$$\text{so } b = 4 \text{ cm}, h = 12 \text{ cm}$$

$$A = \frac{1}{2} (4 \times 12)$$

$$A = \frac{1}{2} (48)$$

$$\boxed{A = 24 \text{ cm}^2}$$

Total area of Shape

= 1 Square's Area + triangle + square :

$$= 144 \text{ cm}^2 + 24 \text{ cm}^2 + 16 \text{ cm}^2$$

$$\boxed{\text{Total Area} = 184 \text{ cm}^2} \text{ Answer (2)}$$

$$\boxed{\text{Total perimeter} = 90 \text{ cm}} \text{ Answer (1)}$$

Part d

Ages of ^{students} group = 15, 15, 16, 16, 16, 17, 17, 18, 19

$$\text{mean} = \frac{(x_1 + x_2 + x_3 + \dots + x_n)}{\text{Total no}}$$

$$\text{So} = \frac{15 + 15 + 16 + 16 + 16 + 17 + 17 + 18 + 19}{9}$$

$$\text{mean} = \frac{168}{9}$$

Medium 16 is the medium.

mode 16 is the mode be it is repeated highest time.

Range

is the difference b/w the lowest and highest value.

$$\text{So Range} = (\text{lowest} + \text{highest}) \\ = (\text{highest} - \text{lowest})$$

Area

$$= 19 - 15$$

$$= 4$$

So range is 4

Q - NO - 7 Part a

Total no. of seats = 400

Total occupied seats = 325

empty seats = 75

$$\% \text{age of capacity attendance} = \frac{325}{400} \times 100 = 81.2$$

81.2% ^{spectators} students are presents

while 18.75% ~~stud~~ spectators are abse.

Q-NO-1 [part b]

NO. of persons = 30

in 10 day the use sugar = 40kg.

in How much days 80 persons use
320kg Sugar.

Let draw a table.

Persons :	Sugar :	days
30	40	10
80	320	x

\uparrow \uparrow \uparrow
 \downarrow \downarrow \downarrow

So

$$\frac{x}{10} = \frac{30}{80} \times \frac{320}{40}$$

$$x = \frac{30}{80} \times \frac{320}{40} \times 10$$

$$\boxed{x = 30}$$

Hence 80 persons will use 320kg
Sugar in 30 days.

Q-NO-7 [part d]

Radius of cylinder = 10cm

height of cylinder = 36cm.

volume " " = ?

By using formula = volume = $\pi r^2 h$

$$= (3.14)(100)(36)$$

$$= 11304$$

Hence volume of a cylinder is 11304



General Science

Q-NO-4.

Define following

Pesticides:- pesticide is a substance or mixture of substance that can be used to kill, destroyed, repell or mitigate any pest. Pest are small organisms that can cause dose to mankind, economically e.g Agro-chemical etc.

Herbicides Herbicides are substance that are used to kill herbs, shrubs etc that are unwanted and called weeds.

$$= (3.14)(100)(36)$$

$$= 11304$$

Hence volume of a cylinder is 11304



General Science

Q-NO-4.

Define following

Pesticides:- pesticide is a substance or mixture of substance that can be used to kill, destroyed, repell or mitigate any pest. Pest are small organisms that can cause dose to mankind, economically e.g Agro-chemical etc.

Herbicides Herbicides are substance that are used to kill herbs, shrubs etc that are unwanted and called weeds.

Insecticides:- These are used to kill insect that can cause harm to crops.
e.g

Ceramics

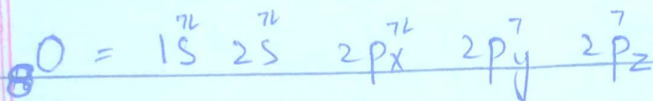
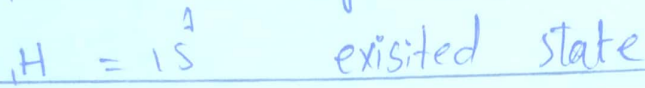
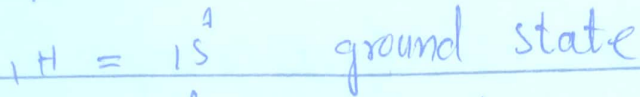
Ceramics are inorganic non-metallic substance made by using clay. Ceramics are presents all arounds us.

e.g pitcher, pots etc.

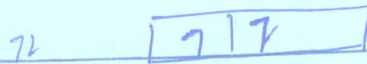
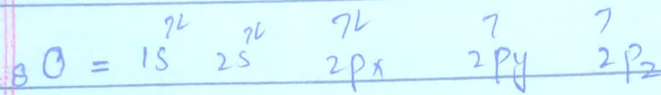
Green House effect :

Due to human activities & natural activities some gases called green house gases (CO_2 , CH_4 etc) are produced. These GHG didn't allow sun rays to reflect back into the space. when sun rays not go back they remain in our atmosphere and cause earth temperature to increase. Thus effect is called Green House effect.

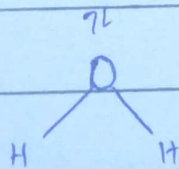
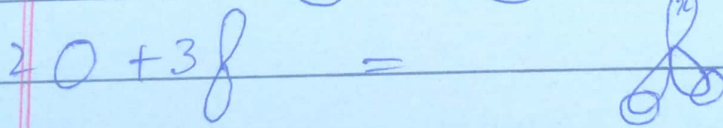
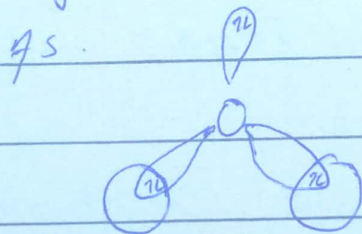
(b) explain the bonding in H₂O.



Ground state.



These two unpaired electrons of oxygen will take part in bonding with Hydrogen.



due to presence of non-bonding electron its geometry is distorted will form angle of 104.5

As its bonding is sp^2

Q - NO - 4

Part d

AI disadvantages & advantages

What is AI?

Artificial intelligence is a ~~human~~ intelligence based machines that can be used to act like human being.

AI has ability to do all types of things that can human being do. :-

Advantages:-

- ⊙ All mobile / smart phones are based on these AI tool.
- ⊙ it can be used to predict earthquake.
- ⊙ also used in pollution prediction and prevention.
- ⊙ In education AI can be use as instructor essay writer and essay checker. It can be used in research activities assignment writing etc.
- ⊙ In medical field, it can carry out surgeries with 98% accuracy.

Disadvantages:

- ① It can breach the privacy of Human.
- ② With its multiform nature it causing unemployment of worker.
- ③ ChatGPT ^{has been} feeded 830000 book of different writer to train it.

So it can disrespecting talent.

- ④ It is actually find new ways of ~~finding~~ to use resources. So, such tracks and ways can cause rapid destruction of limited natural resources.

⑤ Fear of being out of human control it also a disadvantage.

⑥ It promoting Capitalist system.

Q - NO - 4

Part

In Radar, Sonar, Lidar, mobile phone and thermistor radio waves are used. Radio waves are longer than 1mm to several Km. Since they are longer waves so have lowest energy and temperature. These waves can found every where in this universe.

Q-NO-3Part cSemi-conductor:-

Semi-conductor are substance that can conduct electricity partidly.

e.g Graphite

Graphite, a metal, form of Carbon that can conduct electricity in parallel form but in perpendicular side it will not conduct electricity due to hindrance in movement of e free electrons.

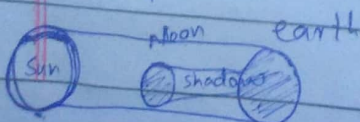
So i

Part d

eclipse is a process in which a heavy body such as moon or planet move into the shadow of another heavenly body.

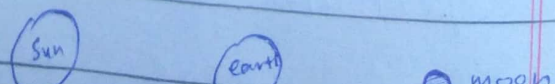
Solar eclipse

when moon moves b/w the sun & earth.



Lunar eclipse

when earth moves b/w the sun & moon.



Q-No-3

Part b

origin of universe.

largely accepted theory about the origin of universe is big bang theory. According to this theory our earth come into being 13.7 million years ago when explosion occur. At beginning our universe was smaller than a pin head. After explosion it grow in a fantastic way and still is expanding.

As universe is expanded, cooled and energy particles and anti-particles started cancelling each other. But some particle survived.

In 10^{-4} second neutron and proton and ~~electron~~ electron started capturing each other. In ³ ~~one~~ ^{mint.} second its temperature dropped to $10000000000^{\circ}\text{C}$.

After 300000 years the temperature dropped to 3000°C . cooled enough for nuclei to capture electron.

DAY: _____

DATE: _____

universe filled with H & He clouds
and finally dust clouds formed
celestial bodies like Sun, stars
planet come in to being.

Hubble's law can be
use to find the age of
universe.