

Section - II

Q. No. 7:

Q. The sum of two ----- numbers?

Solution:

Let

The two numbers be x and y .

So from question.

$$x + y = 23 \quad \text{--- (1)}$$

$$xy = 132 \quad \text{--- (2)}$$

From (1)

$$x + y = 23$$

$$y = 23 - x \quad \text{--- (3)}$$

Put (3) in (2).

$$(2) \Rightarrow xy = 132$$

$$\Rightarrow x(23 - x) = 132$$

$$\Rightarrow 23x - x^2 = 132$$

$$\Rightarrow x^2 - 23x + 132 = 0$$

$$\Rightarrow x^2 - 11x - 12x + 132 = 0$$

$$\Rightarrow x(x - 11) - 12(x - 11) = 0$$

$$\Rightarrow (x - 12)(x - 11) = 0$$

So, $x = 12$ and $x = 11$

$$\textcircled{1} \Rightarrow \text{Put } x = 12$$

$$12 + y = 23$$

$$y = 11$$

Now put $x = 11$ in $\textcircled{1}$

$$\textcircled{1} \Rightarrow 11 + y = 23$$

$$y = 12$$

So, the two numbers are **11** and **12**.

b. 40% of a ----- number?

Solution: let number be x .

As given that.

40% of x is more than 20% of 650 by 190.

So,

$$\frac{40}{100}(x) = \frac{20}{100} \times 650 + 190$$

$$\Rightarrow 0.4x = 0.2 \times 650 + 190$$

$$= 130 + 190 = 320$$

$$x = \frac{320}{0.4}$$

$$\boxed{x = 800}$$

c. A man ----- car?

Solution:

Let the market price be "x".

∵ Man gets 20% discount so he pays on 80% of market price.

So,

$$80\% \text{ of } x = 70,000,000$$

$$\Rightarrow \frac{80}{100} \times x = 70,000,000$$

$$\Rightarrow 0.8x = 70,000,000$$

$$= 70,000,000 / 0.8$$

$$\boxed{x = 87,500,000}$$

So,

Market price was 87.5 million.

d. A number is ----- is?

Solution:

Let the number is 'x'.

Now,

Increase by 10%.

$$x + 10\%x = x + 0.1x$$

$$= 1.1x \quad \text{--- (1)}$$

Now,

Decrease by 10%

$$\Rightarrow 1.1x - 10\%(1.1x) = 1.1x - 0.11x$$

$$\Rightarrow 0.99x \quad - (2)$$

~~(1) - (2) =~~

$$(2) - x \Rightarrow$$

$$0.99x - x$$

$$= -0.01x$$

$$= -0.01 \times 100\% \times x$$

$$= 1\% x$$

So 1% decrease

Q. No. 6:

a. The sum ----- numbers.

Solution:

Prime numbers are those numbers which is divisible by 1 and itself only.

So,

3 consecutive prime numbers will be.

$$47 + 53 + 59 = 159$$

So numbers are

47, 53, 59

b. The perimeter ----- to?

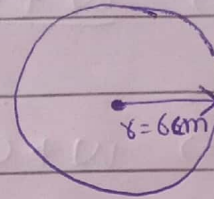
Solution:

We know that

$$\text{Perimeter of circle} = 2\pi r \text{ --- (1)}$$

Here,

$$r = 6 \text{ cm}, \pi \approx 3.14$$



So,

$$\text{(1)} \Rightarrow \text{Perimeter} \approx 2(3.14)(6)$$

$$\approx 37.6992 \text{ cm}$$

So, Perimeter is approximately equal to 37.6992 cm

c. Find the ----- 20 years.

Solution:

Let present age of

$$\text{Man} = M$$

$$\text{Wife} = W$$

$$\text{child} = C$$

As given. 3 years ago.

$$\frac{(M-3) + (W-3) + (C-3)}{3} = 27$$

$$= \frac{M + W + C - 9}{3} = 27$$

$$M + W + C = 90 \quad \text{--- (1)}$$

Also, ~~After~~^{before} 5 years.

$$\frac{(W-5) + (C-5)}{2} = 20$$

$$\Rightarrow \frac{W + C - 10}{2} = 20$$

$$\Rightarrow W + C = 50 \quad \text{--- (2)}$$

Put (2) in (1).

$$(1) \Rightarrow M + 90 = 50$$

$$\Rightarrow \boxed{M = 40}$$

So the man's present age is 40 years.

d. The sum of ----- number is?

Solution:

Let the three numbers are

A, B and C.

As given.

$$i. A + B + C = 98 \quad \text{--- (1)}$$

$$ii. A : B = 2 : 3$$

$$iii. B : C = 5 : 8$$

Now,

$$\text{From } A : B = 2 : 3,$$

Section - I:

Q. No. 5: What is radioactivity-----.

Answer:

Radioactivity:

The spontaneous emission of particles or electromagnetic radiation from the unstable nucleus of an atom is called radioactivity.

This phenomenon was discovered by Henri Becquerel in 1896.

Example:

Heavy elements like U, Th, Ra and Po are radioactive elements.

Difference b/w natural & artificial radioactivity:

★ Natural Radioactivity:

The spontaneous emission of radiation from unstable atomic nuclei of certain elements i.e. uranium, thorium, and radon. The process occurs

naturally in environment and can be found in Rocks, soil, air, water.

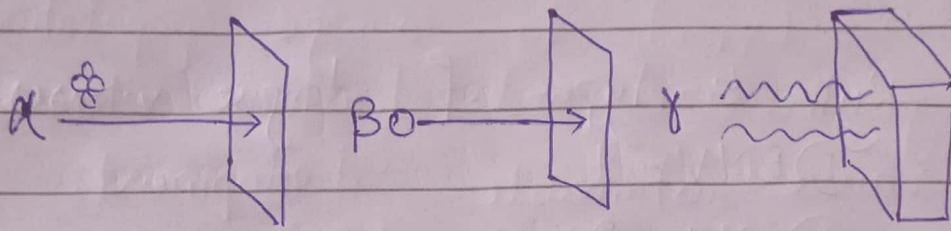


Fig: 5.a.1: Types of radiation

A Artificial Radioactivity:

The emission of radiation from atomic nuclei that have been made unstable through human intervention.

Such as: Nuclear reactions, particle acceleration, nuclear fission -

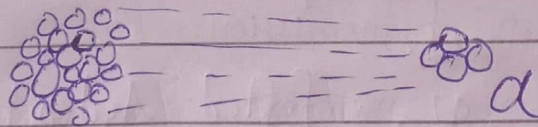


Figure: 5.a.2: Ejection of a particle.

b. What is dengue fever? - - - -

Answer:

Dengue fever is a viral infection spread by the bite of infected Aedes mosquitoes,

prevalent in tropical and subtropical regions.

★ Causes:

By 4 types of dengue viruses.

i. DENV-1.

ii. DENV-2

iii. DENV-3

iv. DENV-4

★ Symptoms:

i. Fever (upto 104°F)

ii. Severe headache

iii. Pain behind eyes.

iv. Joints pain.

v. Swollen glands.

★ Modes of transmission:

i. Bite of infected Aedes mosquitoes.

ii. From mother to child during pregnancy.

iii. Organ donation.

★ Prevention:

i. Protective clothing.

ii. Elimination of standing water.

iii. Vaccination (Dengvaxia and Qdenga).

C. Write the steps-----

Answer:

Steps:

- i. Waste produces in households, commercial and institutions.
- ii. Then collection of these waste in containers.
- iii. Then transport to transfer stations.
- iv. Separation of different wastes from each other.
- v. Treating of waste like recycling, composting.
- vi. Disposing of waste in landfills.

Issues in Pakistan related to waste:

- i. Lack of infrastructure for collection.
 - ii. Only 60-70% waste is collected.
 - iii. Open burning and dumping.
 - iv. Lack of awareness in public.
 - v. Lack of policies and governance.
 - vi. Insufficient funding.
 - vii. Health and environment impacts.
-

d. What do you -----

Answer:

Effort to manage population growth, size and structure to achieve sustainable development, improve quality of life, and ensure a balance between population and resources.

Benefits:

- i. Improved healthcare.
 - ii. ~~Slower~~ Slower population growth lead the increased economic growth.
 - iii. Reduced pressure on natural resources.
 - iv. Prevention of ecosystem.
 - v. Better access to education, especially for women and girls.
 - vi. ~~Enhance~~ Enhance overall well-being, increased life expectancy, and better living standards.
-