MOCK - 1

Date: 30/Apr/2025

G-K (General Science and Ability) Paper - I

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PART - II

SECTION - I

Q.No.2

(a) Malnutrition:

When a person does not get enough food supplies they go through a condition of malnutrition.

Usually occurs in the ages of 6 months to 1 year olds, when they do not get enough carbohydrates, fats and protiens they become weak and this condition is called malnutrition.

Causes :-

Causes of malnutrition includes; war, famine, poverty, disasters or any situation where food availibility declines for people.

Consequences:

Malnutrition leads to decline in growth of people with respect to their body. In some cases muscles get thinner and in other muscles and limbs ~~star~~ both start to get thinner.

(b) Food Contamination:-

Addition of ~~of~~ unwanted or harmful substance from the environment into food is called food contamination.

For example; baileria and viruses adding in food cause food contamination.

Fungus growth in bread, contaminates the bread

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which can not be consumed after. Contaminated food is bad for health and should be avoided.

Adulteration:-

When something is made poored in quality by adding another substance, it is called adulteration.

Adulteration is mostly done intentionally due to economic or social factors, where as food contamination is a natural process.

Examples of Adulteration:

- Adding chalk to flour for increasing quantity.
- Adding water to milk for same reason.
- Adding edible colors to food for aesthetics.

(c) Compiler Buses:-

Compiler buses are communication systems within compilers that different parts of a compiler. These buses carry information/data. There are three types of Buses

(1) Adress Bus : It carries memory location where data is being sent or stored.

(2) Data Bus: it transfers data between components.

(3) Control Bus: It is used by CPU to communicate with other devices like mouse, keyboard or printer.

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RAM	ROM
∘ Random Access Memory	Read only Memory.
∘ Volatile Data is lost when power is off.	∘ Non-Volatile Data is stored even when power goes off.
∘ Temporary data storage	∘ Permanent data storage.
∘ Faster than ROM	∘ Slower than RAM.

(d) Geo-stationary Satellites:-

Satellites that orbit the Earth are called geo-stationary satellites.

There are different types of geo-stationary satellites.

~~① Low orbit satellites~~

These satellites orbit the Earth right above the equator at 35,700 km altitude.

They have the same speed as the Earth's rotation speed around its axis.

These satellites are used for weather forecasting, connectivity and spatial analysis.

Natural Satellites:

Natural satellites are the moons that orbit around the planets.

Artificial Satellites:-

Artificial satellites are man made satellites sent in orbits to collect information about space, planets or are used for providing network.

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Q. NO. 4:

(a)

Temprate Cyclones	Tropical Cyclones.
• Cold cored	• Warm cored
• Winds Increase with height	• Wind decrease with height
• Less intense Rainfall.	• Intense rainfall than temprate cyclones.
• Form where cold and warm air meet.	• Form over warm ocean waters.
• Large in scale and cover greater area	• Smaller in scale, cover less area

(b) Star:-

Main body of a solar system around which planets revolve in orbits. Greater in size, and volume than planets. Main source of energy for the planets.

Example: Sun.

Planet:-

Planets are smaller is size and volume than a star. Planets revolve around the star. Planets have moons as their natural satellite.

Example: Earth, Mars, Jupiter, Saturn, Venus.

Star to Black hole:-

When a star is at its final stage that is either it is becoming a red giant or it is exploding as a supernova; the bigger stars unlike our sun goes through supernova explosion where the core collapses rapidly and leaves

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behind a neutron star or black hole. In this way larger stars form black holes when they die.

(c) Chemical bonds:-

Atoms form chemical bonds to become more stable. This is done by filling their outer shells with electrons. When atoms form chemical bonds they usually share, gain or lose electrons with other atoms forming molecules and compounds.

Structure of Water Molecules-

A water molecule has two Hydrogen atoms and one oxygen atom. These three atoms make the H-O-H bond.

(d) Conductors:-

Materials through which electricity and heat can pass through are called conductors.
E.g: Metals

Semiconductors:

Substances or materials that can act as conductors and insulators under influence of different factors are semiconductors.
e.g: Silicon, Germanium.

Metals:-

Materials that are good conductors of heat and electricity are called metals.
Eg:- Iron, copper.

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Plastic:-

Synthetic or semi-synthetic materials made of polymers.

E.g: Polythylene, Propylene.

Ceramics:

Non-metallic and inorganic substance formed by mixing different materials.

E.g: Clay, Glass

SECTION: II

Q6:-

(a) Let the prime numbers be

P_1, P_2, P_3

$P_1 + P_2 + P_3 = 159$

$3P = 159$

$P = 53$

Prime numbers before and after 53 are 47 and 59.

Answer = 47, 53, 59.

(b) Radius = 6 cm

$2\pi r$ = Circumference / Perimeter

$2 \times 3.143 \times 6$

Approximately 36 cm.

Perimeter would be 36 cm.

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(c) Let present age of man = x

Avg age of wife, man and child = $\frac{x+w+c}{3}$

Avg age of wife and child = $\frac{w+c}{2}$

Avg age of all 3 years ago = $\left(\frac{x+w+c}{3}\right) - 3 = 27$ — (i)

Avg age of wife and child 5 yrs ago = $\left(\frac{w+c}{2}\right) - 5 = 20$ — (ii)

Solving the eq. ii

$$\frac{w+c}{2} = 20 - 5$$

$$w+c = 15 \times 2$$

$$w+c = 30$$

Put in eq (i)

$$\left(\frac{x+30}{3}\right) - 3 = 27$$

$$\frac{x+30}{3} = 30$$

$$x + 30 = 90$$

$$x = 90 - 30$$

$$\boxed{x = 60}$$

present age of man is 60 years.

(d) $x + y + z = 98$

$$\frac{x}{y} = \frac{2}{3} \quad \& \quad \frac{y}{z} = \frac{5}{8}$$

$$x = \frac{2}{3}y \qquad z = \frac{8}{5}y.$$

$$\frac{2}{3}y + y + \frac{8}{5}y = 98$$

$$\left(\frac{10}{15} + 1 + \frac{24}{15}\right)y = 98$$

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$$\left(\frac{34}{15}+\frac{15}{15}\right)y = 98$$

$$\frac{49}{15}y = 98$$

$$y = \frac{98 \times 15}{49_7}; \quad y = \frac{210}{7}$$

$$\boxed{y = 30}$$

The second number is 30.

Q: NO. 7:

(a) $x+y = 23$ — (1) $\quad xy = 132$ — (2)

$\frac{132}{y} + y = 23$ $\quad x = \frac{132}{y}$.

From (1) $x = 23 - y$

$y^2 + 132 = 23y$ ↓

$y^2 = 23y - 132$ put in (2)

$y^2 = -109$

$(23-y)(y) = 132$

$23y - y^2 = 132$

$y^2 - 23y + 132 = 0$

$y^2 - 11y - 12y + 132 = 0$

$y(y-11) - 12(y-11) = 0$

$(y-12)(y-11) = 0$

$\boxed{y = 12}$ $\quad y = 11$

put in (1)

$x + 12 = 23$

$\boxed{x = 11}$

The two numbers are 11 and 12.

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(b) Let x be the number

40% of x = 20% of $650 + 190$

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

$\frac{4x}{10} = 130 + 190$

$x = \frac{320 \times 10}{4}$

$x = 800$

The number is 800.

(c) Cost price = 70,000,000 Rs

Discount = 20%

Marked price = x

Sell price = $x - 20\%.x$

$= 80\%.x$

$x \times 80\% = 70,000,000$

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

$x = 350,000,000/4$

$x = 87,500,000$

The marked price of the car was 87.5 million.

(d) Let x be the number.

Increase $x + 10\%.x$

$= x + \frac{10}{100}x$

$= x + 0.1x = 1.1x$

Decrease

$= 1.1x - \frac{10}{100} \times 1.1x$

$= 1.1x - 0.1 \times 1.1x$

$= 1.1x - 0.11x$

$= 0.89x$

$1.1 \times 0.1 = 0.11$

$0.11 \times 0.1 = 0.011$

$1.1 - 0.11 = 0.89$

The number decreased by 0.1.