Q.2

Introduction

Malnutrition is a significant global public health concern that affects millions of people, particularly in developing countries. It hinders physical and mental development, weakens the immune system, and perpetuates the cycle of poverty and disease. Malnutrition is not limited to ~~undermin~~ undernutrition but also includes deficiences, excesses, or imbalance in a person's intake of energy and nutrient.

Definition of Malnutrition

Malnutrition refers to a condition that occurs when a person's diet does not provide adequate nutrient when the body cannot properly absorb the nutrient from food.

Major Causes of Malnutrition

1. Poverty: It limits individuals' access to nutritious food, clean water, and essential health services
2. food insecurity: A lack of consistent assess to sufficient and nutritious food results in hunger and nutrient dificiencies.
3. Poor Mental health and Infant feed Pratices: Mothers who are malnourisheed are more likely to give brith to underweight babies.

4. Lack of Education: A lack of awareness regarding balanced diets and proper feeling practices often leads individual to make poor

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nutrition choices, increasing the risk of malnutrition.

5. Diseases and infections: Illnesses such as diarrhea, malaria, and intestinal worms, impair the body's ability to absorb essential nutrients.

6. Poor Sanitation and infections: Unsanitary conditions and poor hygiene practices increase the risk of infections, particularly in children, leading to nutrient loss and weakened immue systems.

Consequences of Malnutrition

- Health impacts: It is the weakened immunity, higher mortality rates, development ~~rate~~ delays, and increased vulnerability to disease.
- Economic cost: It is reduced productivity, ~~and~~ increased healthcare cost, and impaired human capital development.
- Social Effect: It hinders educational attainment and perpetuates the cycle of poverty.
- National Impact: A malnourished population affects national growth, development, and stability.

Conclusion: Malnutrition is a multifacted issues that stems ~~be~~ from both individual

and systemic factors, inev including poverty, lack of education, poor healthcare, and political instability.

b.

~~Food Contamination~~

Introduction:

Food Safety is a critical aspect of public health. Two major threats to it are food Contamination and food adulteration. Though often used interchargeably, these terms refer to distinct ~~phem~~ phenomena. Understanding the different is essential for identifying risk, ensuring food quality, and protecting Consumers from potential health hazards.

Difference Between food contamination and food Adulteration

Aspect	Food contamination	Food Adulteration
Definition	The unintended presence of harmful substance in food	The intention ~~additional~~ addition or substitution of inferior substance in food.
Cause	Accidental - due to poor hygiene, pest or pollution	Deliberate - to increase quality or profit.
Nature	Usually unintentional	Alway intentional

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Example	Bacteria in meat, Desticides in vegetable	Adding water to milk, mixing brick powder in chilli powder.
Health Risk	foodborne illneses, infections, posing	long-term health issues, including cancer, organ damage.
Prevention	Poper food handling, hygience, and storage	Strict regulation, legal action, and consumer awareness.

Conclusion

While both food contamination and adulteration endanger public health, their causes and solutions differ.

Computer Buses

A Computer bus is a Communication System that transfers data between different components of a Computer, such as the CPU, memory, anel input/output devices. There are three main types.

Data Bus It carries actual data.

Address Bus It carries memory addresses

Control Bus It carries Control Signals

Difference Between RAM and ROM

Aspect	RAM (Random Access Memory	ROM (Read-only Memory
Functions	Temporarily stores data and programs in use	Permanently stores essential programs like BIOS.
Volatilty	~~Volatit~~ Volatile - data is lost when power is off.	Non-volatile - data remains even after Shutdown.
Write access	Can be read anel written	Usually read-only or limited write access
Speed	Faster ~~as~~ access	Slower compared to RAM.

Usage	Used by CPU during normal operations	Used dru during ~~sty~~ system startup

Understanding the Roles of RAM and ROM helps in grasping how a computer stores and accesses data during operation and ~~boos~~ booting. Similary, the bus system is essential for smooth communication between these and other hardware of ~~computer~~ components.

Conclusion

In conclusion, computer buses are the backbone of communication within a computer system, while RAM and ROM are two key types of memory that support both processing and startup functions.

d)

Introduction:

Satellite play a ~~the~~ crucial role in modern science, communication, and space exploration. They orbit around larger celestial bodies and are classified into two types: natural and artificial. ~~Amou~~ Among artificial satellites, geo-stationary ~~stat~~ satellites hold special importance due to their fixed position relative to Earth.

Geo-Stationary ~~Sto~~ Satellites:

A geo-stationary satellite, is an artificial ~~st~~ satellite that orbits the Earth at an altitude of approximately 35786 km above the ~~equto~~ equator. It moves at the same rotational speed as Earth, so it appears to remain fixed over one point on the surface. These satellites are mainly used for telecommunication, weather forecasting, and T.V broadcasting.

Distinguish natural and Artificial Satellites.

Aspect	Natural Satellites	Artificial Satellites
Definition	Naturally occuring bodies that orbit planets	Man-made objects launched into orbit
Examples	Moon (Earth), Ganymede (Jupiter)	GIP satellites, Hubbles Space Telescope
Origin	Formed naturally	Built and launched by humans
Purpose	Exist naturally, without human purpose	Used for communication navigation, researches.

~~How~~ Artificial Satellites

As of now, Jupiter does not have any artificial satellites sent by humans that are permanently orbiting it. However, spacecraft like Galileo, Juno, and Pioneer have been sent to study Jupiter, but these are considered space probe, not permanent artificial satellites. Jupiter does have over 90 natural moons, but no human made satellites orbit it continuously like those around Earth.

Conclusion: Satellites both natural and artificial

are essential for understanding our universe and improving life on Earth. Geo-Stationary Satellites serve vital communication functions while natural satellites like the Moon influence tides and planetary dynamic.

Q:4

a) Differentiate Between Temperate and Tropical Cyclones

Feature	Tropical Cyclones	Cyclon-Temperate cyclones
Formation Area	Over warm tropical oceans.	In mid-latitude regions (30°-60°) N/S)
Origin Temperater	High sea surface temperature (>26°C)	Formed due to temperature contrast between air masses
Structure	Symmetrical and Eie Er circular	Asymmetrical and frontal
Enger source	Warm ocean Water	Horizontal temperature gradients (fronts)
Examples	Hurricanes, typhoons	No easters, depression over europe..

b) Differentiate Between State star and Planet.

Feature	Star	Planet
Nature	A luminous body that emits it own light	A non-luminous body that reflects star's light.
Composition	Made of hot gases (mainly hydrogen and helium)	Made of solids, liquids and gases.
Energy	Produces energy through nuclear fusion	Do not produce its own energy
Example	Sun	Earth / Jupiter.

A Star become a Black hole

When a massive star (about 20 times the mass of the Sun or more) exhausts it nuclear fuel, it collapses under it own gravity. if the remaining core is heavy enough, this collapse continues infinitely forming a black hold, where gravity is so strong that not even light can escape.

6) Atoms form Chemical Bonds.

Atoms from chemical bonds to achive a stable electronic configuration, usually similar to that of ~~no b~~ noble gases. (full outer electron shell) This stable electronic configuration, usually similar to that of noble gases (full outer electron shell) This stability is achieved by sharing losing or gaining electrons forming covalent, ionic, or metallic bonds.

Structure of Water (H_2O)

Water is made of two hydrogen atoms and one oxygen atom held together by covalent bonds. The molecule has a bent (V shape) due to the lone pairs on oxygen. ~~This~~

D) Conductor / Semiconductor / Metal / Plastic / Ceramic

Material Type	Definition	Example.
Conductor	Material that allows easy flow of electricity or heat	Copper.
Semiconductor	Material with conductivity between a conductor and an insulator	Silicon
Metal	Strong, ductile material with high conductivity	Iron
Plastic	Synthetic, ~~fix~~ flexible material made from polymers	Polyethylene
Ceramic	Hard, brittle, heat-resistant, ~~not~~ non-metallic material	Porcelain

Q:8

a) Area of square plot = 289

$\sqrt{289} = 17$

Permeter of squar $4 \times 17 = 68$

Cost per foot $58 \times 68 =$ 3944 Ans.

b)

24 ASE = 15000

TSE 24 = $24 \times 15000 = 360000$

NA = $15000 + 4000 = 19000$

TS of 25 = $19000 \times 25 = 475000$

MS = $475000 - 360000 =$ 115000 Ans

c) ~~Data~~

Profit = $1920 - x$

Loss = $x - 1280$

$$\frac{1920 - x}{x} = \frac{x - 1280}{x}$$

$1920 - x = x - 1280$

$1920 = 2x - 1280$

$1920 + 128 = 2x$

$3200 = 2x$

1600

3200

Profit 25%

$\frac{25}{100} \times 1600 = 400$

S.P $1600 + 400$ **2000** Ans.

d)

The boy is cousin of girl.

Q:7

b.

$0.4 = 0.2 \times 650 + 190$

$0.4 = 130 + 190$

$\frac{320}{0.4} =$ **800** Ans.

c.

$0.8x = 70m$

$x = \frac{70}{0.8} = 87.5$ Ans