

Mock 1 2025

PAPER

GSA

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PART II

SECTION 1

Q No 2

(a) Define the term malnutrition, elaborate its major causes and consequences.

MALNUTRITION:

Malnutrition refers to a condition that occurs when a person's diet does not provide sufficient amount of nutrients for proper growth and health. Malnutrition also occurs when the body cannot effectively absorb the nutrients from food. Malnutrition includes both

- Undernutrition: (underweight, micronutrient deficiency)
- Overnutrition: (overweight, obesity).

- Major Causes of Malnutrition:

Some of the major causes of malnutrition are.

- 1 Poor dietary Intake: lack of vitamins and minerals in food leads to deficiencies
- 2 Poverty:
It limits access to sufficient safe and nutritious food.
- 3 Diseases:
Illnesses, particularly infectious diseases can

disrupt eating habits and impair nutrient absorption.

4 Food insecurity:

This refers to lack of consistent access to adequate food for all household members.

5 Poor Maternal Health:

A mother's nutritional status during pregnancy and breast feeding significantly impacts health and development of her child.

6 Mental Health:

Depression, dementia and eating disorders can significantly affect appetite and food intake.

- Consequences of Malnutrition:

→ Health consequences

• In Children: It causes stunting (low height for age), wasting (low weight), Developmental delays, Increased vulnerability to diseases.

• In Adults: Malnutrition causes reduced productivity, low energy levels, it weakens the immune system and also increases the risk of other chronic diseases like diabetes, hypertension and heart diseases.

b Difference between food contamination and adulteration.

Food Contamination

This refers to presence of unwanted substances or microorganisms in food that can make it unsafe or undesirable for consumption.

These contaminants could be physical, biological or chemical

This reduces the quality of food and may cause illnesses like food poisoning

It may occur during production handling or storage.

Often occurs due to non-compliance to safety standards

eg. Bacteria in undercooked meat

Pesticide residues on vegetables

Food Adulteration

This refers to the practice of intentionally changing the composition or quality of food for financial gains

Adulteration could be intentional, incidental or metallic adulteration.

This can lead to serious illnesses or toxicity.

It is done during processing or selling food items.

This is illegal under food safety law

eg. mixing milk with water.

mixing inferior spices to higher quality spices

C. What are computer buses? Differentiate between RAM and ROM?

COMPUTER BUSES:

A computer bus is a communication system that transfers data between different components inside a computer or between computers. A bus consists of a set of parallel lines. One line bus can transfer 1 bit at a time. The capacity of a computer bus depends on the number of DATA lines in it. CPU communicate with other components of computer through buses.

Classification of Buses

On basis of connectivity there are 2 types of buses.

1. Internal Buses:

It connects the internal components like CPU, RAM to the motherboard.

2. External Bus:

It connects external devices like USB, Printer and Keyboard to computer.

TYPES OF COMPUTER BUSES:

1. Data Bus

2. Address Bus

3. Control Bus.

RAM

- Random Access Memory
- Temporary memory used to store data currently in use
- It is volatile meaning data is lost when power is turned off
- Used for processing and running programs
- Content can be changed easily

ROM

- Read only Memory
- Permanent memory that stores essential instructions
- It is non-volatile data remains even when power goes off
- Used for booting and storing firmware
- Content is usually fixed or hard to modify.

d What are geostationary satellites—?

Geostationary satellite:

A geostationary satellite also known as geosynchronous satellite is an artificial satellite that orbits the earth at an altitude of about 35,786 km directly above the equator. It appears stationary to an observer on earth because it rotates at the same speed and direction as earth's rotation.

Q NO 4

(a) Differentiate between tropical and Temperate cyclones.

Tropical Cyclones

These are formed in tropical regions

Formed over warm oceans

Symmetrical and circular in shape with an eye in the center.

Moves westward

Hurricane Katrina

Temperate Cyclones

Formed in mid latitudes.

Over land and sea in temperate zones.

They are asymmetrical with a frontal system.

Moves from west to east.

Cyclone Nargis.

(b) Difference between star and planet. How star becomes a black hole?

STAR

- A star is a massive, luminous sphere of plasma that produces its own light and heat through nuclear fusion.
- Emits light and heat.
- Sun, Sirius.

PLANET

- A celestial body that orbits a star and does not produce its own light.
- Reflects light from a star.
- Earth, Mars.

Natural Satellites

These are celestial bodies that orbit planets naturally.

They are formed naturally through cosmic events.

They have no human designed function.

They are governed by natural gravitational forces.

eg Moon (Earth)

Artificial Satellites

These are man made objects placed into orbits.

These are made by humans.

They serve in communication & defense.

They are controlled partially by technology.

eg Hubble Telescope.

⇒ Jupiter has no artificial satellites.

⇒ How a star becomes a black hole?

When a star reaches the end of its cycle. In order to make a black hole a star must be massive. at least 3 times the mass of sun. When this massive star runs out of nuclear fuel. It undergoes an explosion called as Supernova. The core of star collapses under gravity and compresses into an infinitely dense point called as black hole.

(c) Why do Atoms form Chemical Bonds:

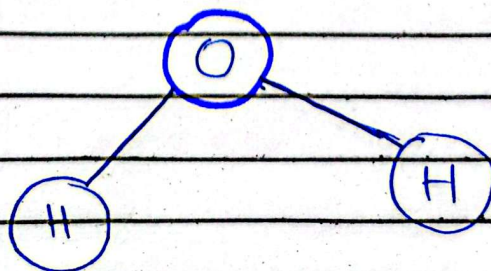
Atoms form chemical bonds to achieve a stable electronic configuration like the noble gases having a full outer shell.

Bonding reduces potential energy of atoms and makes them more stable.

STRUCTURE OF WATER H_2O :

Water molecule has two hydrogen atoms and one oxygen atom.

Oxygen shares one electron with each hydrogen forming a covalent bond.



(d) What are:

1 **CONDUCTORS:**

Conductors are materials that allow electric current to easily pass through them. eg Copper.

2 **SEMI CONDUCTORS:**

These are materials that allow partial conductivity.

3 **METAL:**

These are elements that are ductile and good conductors of heat and electricity eg Aluminium.

4 **Plastic:**

This is synthetically made and acts as an insulator.

5 **Ceramic:**

These are inorganic materials which are hard, brittle and heat resistant. eg Porcelain.

Q No 8

(a)

Given data.

Area of square = 289 sq Ft.

Area of square = (side length)²

$$\text{Side length} = \sqrt{289} = 17 \text{ ft}$$

$$\text{Perimeter} = 4 \times \text{side length}$$

$$= 4 \times 17$$

$$= 68$$

Calculating total cost of fence.

Cost per foot = Rs 58

$$\text{Total cost} = 68 \times 58$$

$$= 3944$$

(b) Monthly salary of 24 employees.

Given

Average salary of 24 employees = Rs 15000

We have to calculate total salary of employees.

$$\text{Total salary of 24 employees} = 24 \times 15000$$

$$= \text{Rs } 360,000$$

The average salary increases 4000 after adding managers salary.

$$\text{New average salary of 25 employees} = 15000 + 4000$$

new average 25 employees = 19000

calculate Total salary

$$\text{Total salary of 25 people} = 25 \times 19000 \\ = \text{Rs } 475,000$$

subtract old total from new.

$$\text{Manager's salary} = 475,000 - 360,000 \\ = 115,000 \text{ Rs}$$

(C) Percentage Profit earned.

Given.

Selling at Rs 1920 gives profit % = P

Selling at Rs 1280 gives loss % = P

Let the cost price be K

$$\text{Profit \% } P = \frac{\text{selling Price} - \text{C.P.}}{\text{C.P.}} \times 100 \\ = \frac{1920 - K}{K} \times 100$$

$$\text{loss \% } P = \frac{\text{C.P.} - \text{selling Price}}{\text{C.P.}} \times 100 \\ = \frac{K - 1280}{K} \times 100$$

since both percentages are equal.

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

multiply both sides by x

$$x \left(\frac{1920 - x}{x} \right) = \left(\frac{x - 1280}{x} \right) x$$

$$1920 - x = x - 1280$$

$$1920 = x + x - 1280$$

$$1920 + 1280 = 2x$$

$$2x = 3200$$

$$x = \frac{3200}{2}$$

$$x = 1600$$

so the cost price is 1600 Rs.

Now we have to find selling price for 25% profit.

$$\text{New selling Price} = C.P. \times \left(1 + \frac{25}{100} \right)$$

$$= 1600 \times 1.25$$

$$= \text{Rs } 2000$$

New selling Price with 25% profit would be 2000 Rs.

(d) Introducing a boy, a girl said ---?

we have to break down the statement

"He is son of the daughter of the father of my uncle"

1) Uncle

Brother of girl's father or mother

2) Father of uncle

Grandfather.

3) Daughter of father of my uncle

This would be your aunt.

4) Son of the daughter of father of my uncle.

Cousin.

So the boy is girl's cousin brother.