

Date: December 29, 2025

Day

22/9/20

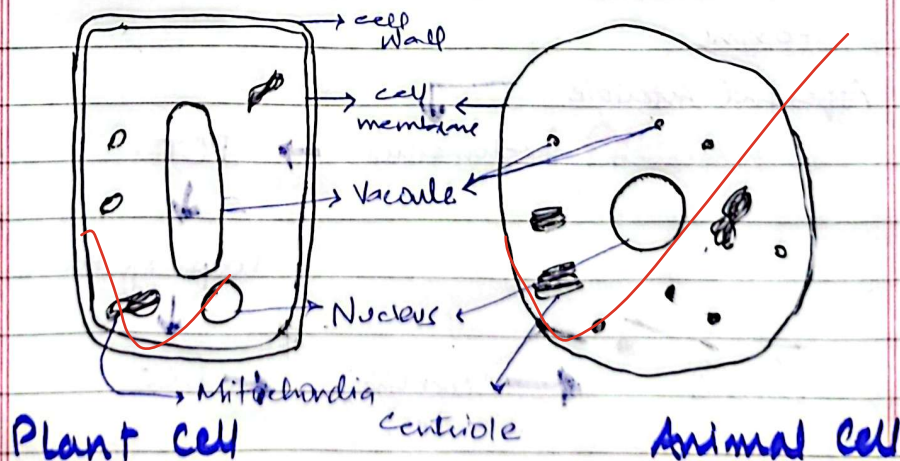
Talat Fatima
Online Test Series
GSA — Test #01

Question (a)

Differentiate between Plant cell and animal cell.

Although plant and animal cells are eukaryotic but they differ in structure and function due to different physiological needs

Features	Plant Cell	Animal Cell
Cell Wall	Present	Absent
Shape	Rectangular fixed	irregular round
Chloroplast	Present	Absent
Vacuole	large central Vacuole	small or absent
Centrioles	Absent	Present
Nutrition Mode	Autotrophic	Heterotrophic



(b) How urine forms in human body

Urine formation is the process by which nitrogenous waste and excess water are removed from blood by kidneys.

Functional Unit — Nephron

Each kidney contains 1 million nephrons

Stages of Urine Formation

1. Ultrafiltration

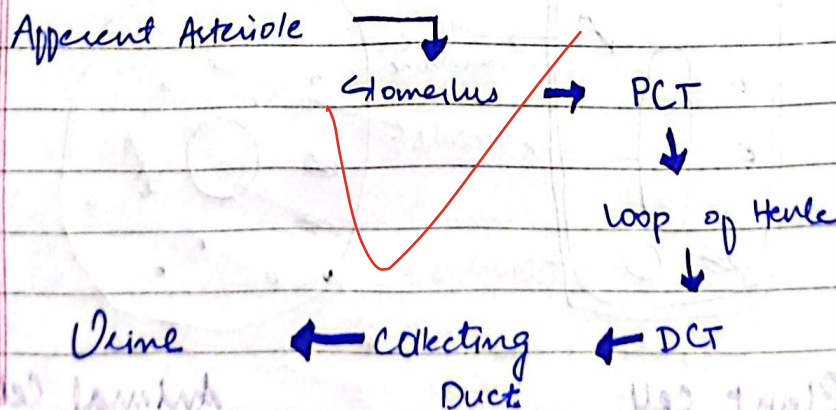
- Occurs in glomerulus
- Blood pressure force plasma into Bowman's capsule
- Proteins and blood cells are retained

2. Selective Reabsorption

- Occurs in proximal convoluted Tubule
- Glucose, Amino acids and water are reabsorbed into blood at this stage.

3. Tubular Secretion

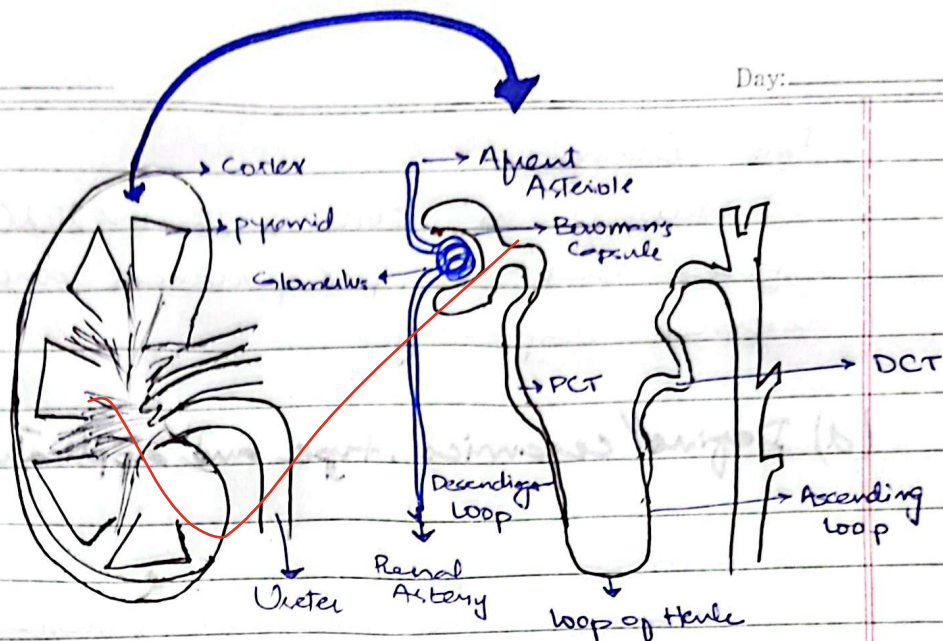
- Occurs in DISTAL convoluted Tubule
- Filtrate produced in previous step is added with extra ions and toxins



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Kidney and Nephron

(C) DAM and Weakness of DRM in Pakistan

Definition

Disaster risk management refers to systematic efforts to reduce disaster risks to enhance preparedness, response and recovery.

Key Components

- Risk assessment
- Early Warning
- Preparedness
- Mitigation
- Rehabilitation

Weakness of DAM in Pakistan

- 1- Weak institutional coordination.
- 2- Lack of Trained man power.
- 3- Poor early warning system.
- 4- Inadequate funding.
- 5- Low public Awareness.

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Past Examples

Floods in 2010, 2012 and 2021 exposed lack of preparedness and response capacity.

(d) Define ceramics, type and application

Definition

Ceramics are inorganic, non-metallic material formed by heating subsequent cooling.

Types

Traditional Ceramics

It includes bricks, tiles and pottery.

Advanced Ceramics

It includes bioceramics and electronic ceramics.

Applications

→ Necessary for construction industry

→ Required in medical implants that is hip

→ Use in electronics like a capacitor and insulator.

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Question (1)

What is Hepatitis. Symptoms

Definition

Hepatitis is inflammation of liver commonly caused by viral infections.

Types

- * Hepatitis A (food and water)
- * Hepatitis B, C (blood and body fluids)

Symptoms

Symptoms include

- * jaundice
- * Dark Urine
- * Fatigue
- * loss of appetite

Prevention

In order to prevent hepatitis following measures should be taken

- * Vaccination (A & B)
- * Safe blood Transfusion
- * Hygiene and sanitation

In hospital setting one must be more conscious and careful regarding blood or body fluid exchange.

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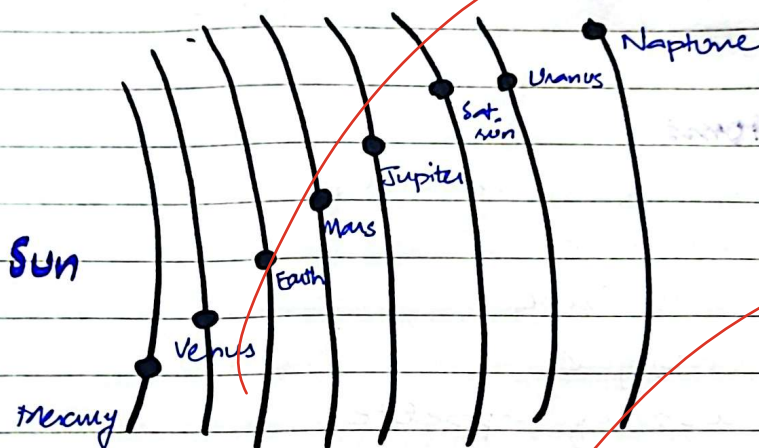
1b) Explain Solar System

Definition

The Solar system consists of the Sun and all celestial bodies gravitational bound to it.

Components

- * Sun 99.8% mass
- * 8 Planets
- * Asteroids
- * Comets



Sun is at center all the planets are orbiting around it. Dwarf Planets are mostly in the belt between Mars and Jupiter and comets all held by gravity in elliptical paths.

1c) Gaseous Exchange in human body

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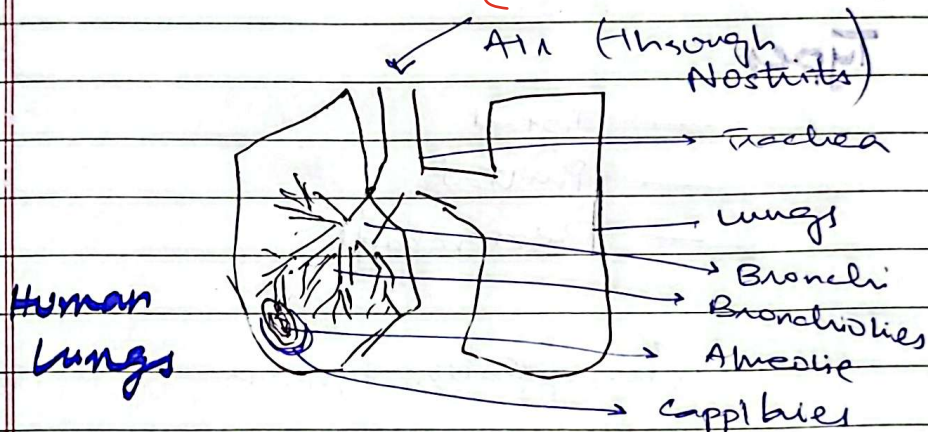
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Definition

Gasous Exchange is the process by which Oxygen enters blood and Carbon dioxide leaves body or removed

Process

Air reaches alveoli
Oxygen diffuse into capillaries
CO₂ diffuse Out



Factors

Thin alveolar wall
Large surface Area
Moist Surface

(d) Solar and lunar eclipse
and types

Solar Eclipse

Occurs when Moon comes between Sun and Earth

Types

- Total
- partial
- Annular

Sun) Moon) Earth

Lunar Eclipse

Occur when Earth comes between Sun and moon

Types

- Total
- Partial
- Penumbrial

Sun) Earth) Moon