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Batch - 331

GSA

Date: _____

(Section-A)

Question No# 3

(a) Describe the role of Kidney
in the urine formation.

Kidney

The kidneys are the most important organ of excretory system. The main function of the kidneys is to filter blood and removed waste products, excessive water and electrolytes from the body.

Collective Duct

The collective duct is a tube in the kidneys that plays an important role in the final processing of the urine.

Nephrons are the basic structure and functional unit of the kidney, that is responsible for filtering blood and producing urine.

(b) What is remote sensing?
Describe its role/applications in the environmental science.

What is Remote sensing

Remote sensing is the process of collecting information from a distance by using sensors on aircraft or satellites.

Remote sensing systems work by detecting and recording electromagnetic radiation.

Role of remote sensing

The goal of

remote sensing is to gather data without direct physical contact with the target. The γ used to record electromagnetic radiation.

The γ mostly used for ~~signals~~ sending out signals and radiations.

Remote sensing has diverse application in various fields, including agriculture, forestry, urban planning and even planetary exploration. It plays a crucial role in gathering data.

(c) What is Green house effect? Shed light on its benefits and how it contributes towards the global warming.

1- What is Green house effect

Green house effect is

a natural process that occurs on the earth and it is essential for supporting life - Green house traps and retains heat.

2- Benefits

Green house gases effect is essential for maintaining a relatively stable climate on our planet and it is essential for life on the planet.

3- Global warming

Excessive green house gases emissions contribute to global warming, which can lead to various environmental and climatic impacts, such as, rising global warming, sea level rise and ocean acidification.

(d)

Describe Food Preservation Method.

Food Preservation methods are techniques used to save and secure food by preventing spoilage, microbial growth and enzymatic reactions. Various food preservation methods have been developed.

Freezing food in low temperature is a method to save food.

Removing water from food and drying food is a method to save water for long time.

Each food preservation has its advantages and its limitations. Proper food preservation help to reduce food waste and ensures food security safety.

Question No # 5

(a) what is your understanding of an Avalanche?

Describe its types - Give a few example.

1 What is Avalanche

An avalanche is a sudden and rapid flow of snow, ice and debris down a mountain side or a steep slope. It is a natural phenomenon that occurs when a mass of snow becomes unstable and loses its grip on the underlying surface, leading to a gravitational collapse and movement downhill.

(i) Types & Examples

- ① Loose snow avalanches
- ② Slab avalanche.

③ wet snow Avalanches

④ Glide Avalanches

Loose Snow Avalanches
occur when individual particles
or loose snow grains slide
downhill

Slab avalanche is
the most dangerous and
destructive type.

Wet avalanches occur
when snow packs become
saturated with water, reducing
its stability.

Here are some examples
of avalanche. White Friday avalanche
The Huascarán Avalanche 1970, and
Tignes avalanche.

(b) what are Em Radiations?
Briefly describe the spectrum of these radiations and their types.

1. Electromagnetic Radiations

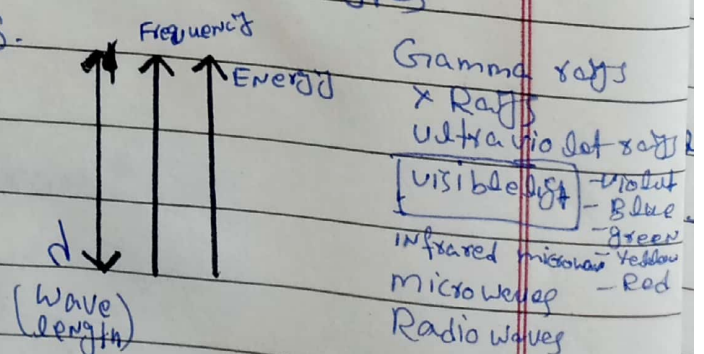
A stream of photon travelling with speed of light in vacume or air known as electromagnetic radiations.

Energy is electromagnetic radiations. Energy is directly proportion to frequency.

Photons are energy packets.

2. Spectrum of Electromagnetic radiations

Electromagnetic spectrum is a way of talking about all different types of radiations.



(i) Gamma rays

Gamma rays are the types of electromagnetic radiations. Gamma rays are produced through nuclear radiations. It has highest frequency, energy and penetrating. It has shortest wave length. These rays used to remove kidney stone.

(ii) X-Rays

X-rays are form of electromagnetic radiation. These are used to visualised the internal structure of the body. It has shortest wave length.

(iii) Ultra violet rays

Ultra violet rays are the form of electromagnetic rays. Ultra violet rays play vital role in scientific research.

(c) What is GPS? How does it work.

1 - GPS

GPS is Global Positioning System - collection of minimum 24 satellite - American U.S based system of satellite - GPS used to determine 2D, and 3D dimension location

2 - Work

GPS receivers use to receive signals from satellite. GPS satellite continuously broadcast radio signals that contain precise timing and satellite location.

(d) what are computer buses?
Explain CPU as brain of computer.

1- Computer buses

Computer buses are communication pathways that allow different components of computer system to exchange data and information. They are the essential for the proper functioning and coordination of various hardware elements within a computer. There are several types of buses

- ① system bus
- ② memory bus
- ③ PCI bus
- ④ Universal bus
- ⑤ SATA bus
- ⑥ Address bus
- ⑦ Data bus
- ⑧ Control bus.

2- CPU

CPU Central Processing of computer is also known as the brain of the computer. It plays vital role in the processing data and controlling the other ^{hardware} components and functions.

(Section - B)

QNO # 6

(a)

Five years ago, age of the father was thrice the age of his son - If son is 30 year old now, what is the current age of father.

Solution - $F - 5 = 3(S - 5)$

$$F - 5 = 3(30 - 5)$$

$$F - 5 = 3(25)$$

$$F - 5 = 75$$

$$F = 75 + 5$$

$$F = 80$$

(B)

(b) A man pays 10% of his income as income tax. If his income tax amount to 1500 ^{his income} what

$$0.10 \times I = 1500$$

$$I = \frac{1500}{0.10}$$

$$I = 15000$$

(C)

$$S = 6 \times 20$$

$$S = 120$$

Sum of remaining 5 numbers = 5×15

$$x = S - (\text{Sum of remaining 5 numbers})$$

$$x = 120 - (5 \times 15)$$

$$x = 120 - 75$$

$$x = \boxed{45} \text{ - Number that was removed}$$

(D)

Find missing number

$$(i) \quad 8, 4, 32, 7, 5 \underline{\quad 128} \\ = 128$$

$$(ii) \quad 17, 19, 23 \underline{\quad 29} \quad 31, 37 \\ = 29$$

Q No # 7

(a)

~~(a)~~

$$C = \pi \times D$$

$$C = 3.14159 \times 7$$

$$C = \boxed{21.991 \text{ meters}}$$

~~(b)~~

(c)

Distinguish IQ & EQ. what are the factors which affect the IQ?

IQ (Intelligence Quotient)

IQ is a measure of Person's ability related to Problem Solving, logical reasoning and analytical skills.

EQ (Emotional Intelligence)

EQ is a measure of a Person's ability to understand, manage and express emotions.

as well as to understand and empathize with the emotion of others.

Factors that effect IQ

There are many factors that effect IQ.

For example -

- ① Genetics
- ② Environment
- ③ Nutrition
- ④ Education
- ⑤ Health
- ⑥ cultural and linguistic factors.