Be in Discussion Class for detailed discussion/Feed back.....

Date: _____

# GSA Test 2

Q2) a) What are $SO_2$ and $NO_2$

$SO_2$ stands for Sulphur dioxide and $NO_2$ stands for Nitrogen oxide. Both the gase are responsible for adverse impacts on human health as well as Environment.

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## Cause of $SO_2$ and $NO_x$ formation

| Sulphur dioxide | Nitrogen oxide |
|---|---|
| -> Burning of Fossil fuels | -> Burning of Fossil Fuels |
| -> Emissions from volcanic Eruptions | -> released from the exhaush of motor vehicles |
| -> smelting of mineral ores | -> during welding, electroplating |

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## Why are $SO_2$ and $NO_x$ considered a threat

Though both the gases have adverse effects, the major negative effect is acid rain. Acid rain is caused when high levels of sulphur dioxide and Nitrogen oxide are emitted into air. These gases condense in troposhpere and precipitate. The precipitation is acidic in nature which impacts environment & living organisms.

b) What is GHE and what is its significance

GHE stands for green house effect. It is a natural phenomenon that regulates the temperature of earth. It is vital for the survival of humans and other living organisms on earth. This phenomenon is caused by gases called Green House Gases that traps the heat from the sun within the atmosphere of the Earth.

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# Enhanced Green House Effect

Enhanced GHG refers to the excessive heat trapped by green house gases in earths atmosphere. This happens when green house gases are present in the atmosphere in large levels. The Enhanced GHE, in turn, causes global warming which is one of the leading cause of environmental degradation. Some major effects of Enhances GHE are as under.

## Major Negative Effects of Green House Effect

→ Global warming →
→ Rising Sea levels
→ Glaciers melting
→ Draught

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## 1) What is Remote sensing

The Process of Remote sensing involves gathering information ~~te~~ regarding earth's surface such as temperature etc, by using various types of sensors ~~equipped~~ installed on satalites and aircrafts.

## How does Remote sensing work

The rays emitted by the sun reach the surface of the earth. some of these rays are absorbed by the objects they strike. The remaining rays are reflected back, where they are intercepted by different sensors. The data collected by these sensors is ~~converted~~ refined and converted into digital information that can be used for several reasons.

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# Applications of remote sensing

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→ Disaster Management
→ Weather Forecast
→ identify glacier melting
→ Identify loss in Forest cover

## Importance of Remote sensing in Environmental science

Remote sensing can be used to closely monitor glacier melting. It can help to check if efforts to reduce glacier melting are working. Furthermore it can be used to timely identify areas where forest cover is decreasing so that counter measures can be introduced sooner. It can also be used to measure the surface temperature of earth and help to keep track of trends and fluctuations in global warming.

Select

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d) What is liver

Liver is the largest solid organ in the body. It is located beneath the rib cage in the right upper abdomen. It is has a diverse range of functions, some are as under:

1) Protein Synthesis

Liver synthesizes many essential proteins, including blood-clotting factors, albumin, and enzymes involved in various metabolic pathways.

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2) Detoxification

Liver also processes and neutralizes harmful substances, such as drugs, toxins, and metabolic by products.

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3) Bile production:

Liver also produces Bile which is essential for digestion and absorption of fats in the small intestine.

4) Storage of Nutrients:

The liver also stores essential nutrients, including glycogen, and fat-soluble vitamins (A, D, E & K).

Q1) a) What is Human Heart

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The human heart is a muscular organ responsible for pumping blood throughout the body, providing oxygen and nutrients to cells and removing waste products. The ~~work~~ process of how heart works is as under:

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# How does human heart work

The process strats with the contraction of the two upper chambers of heart known as Atria. The right atrium receives deoxygenated blood from the body, and the left atrium receives oxygenated blood from the lungs. When atriums contract this blood is shifted to the ventricles. Ventricles are the lower two chambers of heart. The right ventricle pushes the deoxygenated blood to the lungs, while the left ventricle circulates oxgenated blood to the rest of the body. After the contraction the heart goes into a relaxation mode, after which the same process is repeated.

1.b)

The process of seeing is a complicate process. an overview of the process is as following.

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1) Light Enters Eyes

Light is composed of different wavelengths and frequencies. The colours we see are determined the different wavelengths reflected and absorbed.

2) Cornea focus light

Cornea and the lens are the outermost part of the eye. Their purpose is to focus the light onto retina.

3) Formation of image on Retina:

When the light reaches Retina, an inverted image is formed. Retina is the light sensitive layer at the back of the eye.

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4) Photoreceptor Activation:

Photoreceptors are activated when light is absorbed. These receptors transmit signals to the optic nerve.

5) Optic Nerve sends the signals to Brain

Optic Nerve is a bundle of nerves that is responsible for transmitting signals to the brain.

6) Brain and Formation of Image

- The signals are transmitted to the brain, where the information is processed and the image is formed.

Select

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1c) What are Bio fuels

Biofuels are a renewable source of fuels that are derived from living organisms. Unlike the long process of formation of fossil fuels, Biofuels can be produced in a smaller span of time. some examples of Bio fuels include ethanol, biogas, etc. Some of the Factors that make Biofuel so important are as under:

| Reason | Explanation |
|---|---|
| → Reduced GHG emissions | → primary source of [illegible] is burning of fossil fuel. Transitioning to Bio fuels can hence reduce GHG emissions |
| → Renewable | → Biofuels are renewable source of energy so there is no risk of these running out. |
| → Energy Security | → diversifying the source of energy |
| → Economic development in Rural Areas | → Bio fuels products rely on agricultural activities, hence provide opportunities for rural Areas |

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# Production of Biofuels

| Type of Fuel | Production Process |
| --- | --- |
| → Bio ethanol | → Fermentation of sugars and starches by microorganisms to produce ethanol. |
| → Bio diesel | → Transesterification of oils or fats with alcohol to produe bio diesel & glycerol |
| → Biogas | → Anaerobic digestion of organic matter by microorganisms to produce methane-rich biogas. |

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Select