

DATE: ___/___/___

Name:- Noor-ul-Hudda

Batch:- 345 - CSS24 (SB1)

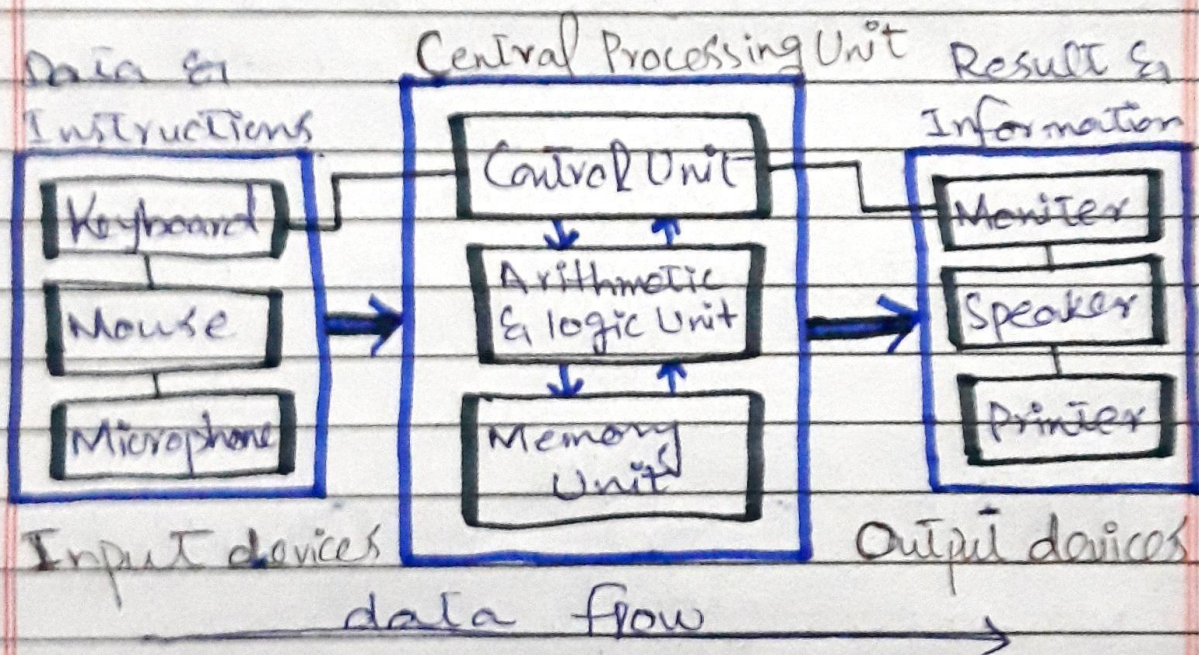
Subject:- General Knowledge - I

Part II

Section - I

Q No 5:-

(a) Input and output devices of computer.



(b) Optics :-

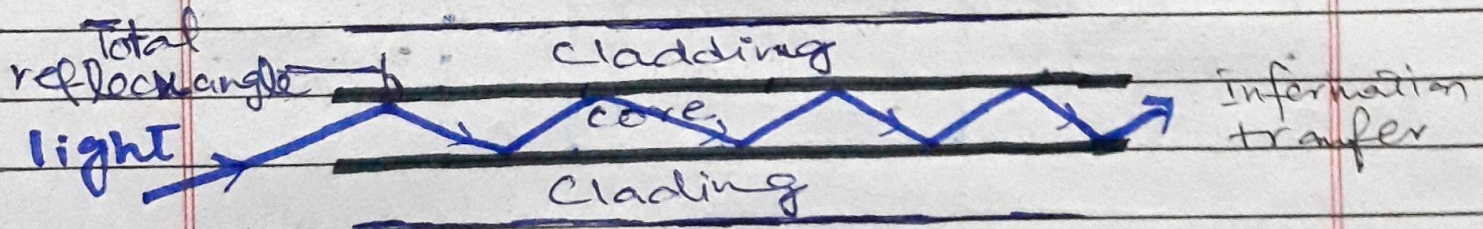
Optics is the branch of physics that studies the behaviour and properties of light and its interactions.

It explains the properties of ultraviolet, visible and infrared light.

Optical fiber working:-

Optical fiber is a fiber optic cable carrying a number of glass fiber and is used to transmit information as light along the glass.

Optical fibre works on the principle of total internal reflection. Light travels down a fiber optic cable by bouncing off the walls of cable at a very high speed. This total internal reflection occurs at the boundaries of the glass core.



(C) Solid Waste Management:-

Solid waste Management is the collecting, treating and disposing of the solid material that is discarded because it is no longer of any use. Solid waste treatment plants are built by municipalities for this.

Methods -

① Landfills -

A landfill is a specially designed pit where solid waste is buried. A special mixture is layered at the bottom of the pit to stop the waste to sink below and pollute the earth. Once the pit is filled it is covered with dirt and over time organic materials decomposes and produce methane gas.

② Recycling -

Recycling is the process of converting used products into new useful products to reduce the consumption of raw material and energy. It involves the process of collection, sorting, processing and manufacturing. Materials like plastic, paper and metals can be recycled.

③ Incineration -

Incineration is the burning of organic material to reduce its volume and mass, at a very high temperature resulting in the

production of ash and heat energy. This heat energy can be used to produce steam for energy production while the ash can be sent to the landfills.

This process requires a special incinerator. It is the most common method to dispose municipal solid waste and medical wastes etc.

④ Composting -

Composting is the process of breaking down the organic material into compost that is a nutrient-rich soil fertilizer. The biodegradable wastes are decomposed under the action of microorganisms, oxygen and water. A batch of compost takes about 6 to 8 months to completely decompose.

It is a commonly used waste management process in villages to produce methane gas and fertilizer.

(A) GPS and GIS:-

Definition:-

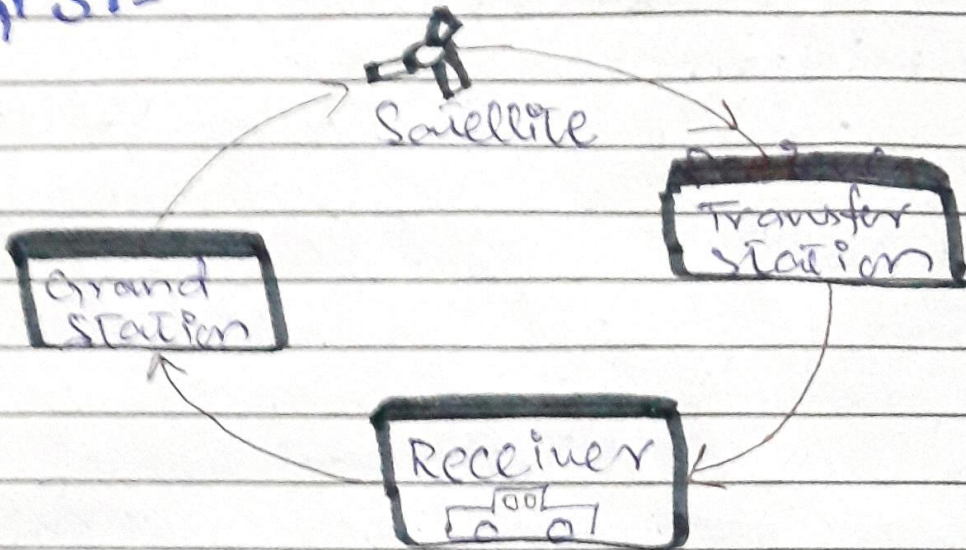
GPS means Global Positioning System that is a US-owned satellite-based navigation system that use a network of satellites and receivers to locate the position of something on Earth. GPS provide location in latitude, longitude and altitude.

Whereas GIS means Geographic Information System that is a computer-based system which is used for capturing, storing, analyzing and visualizing geographic and geospatial data.

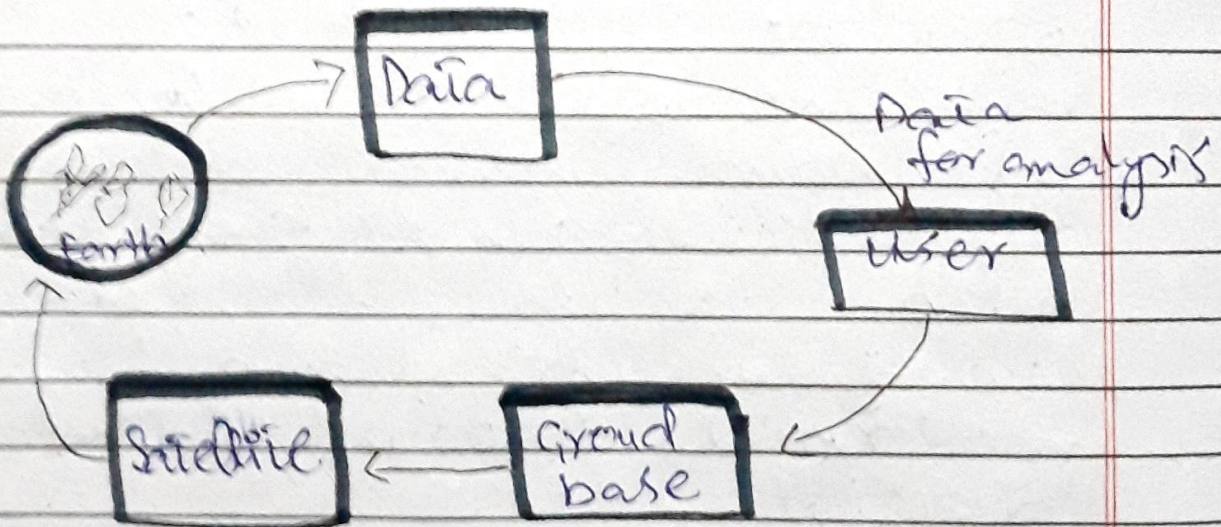
Example:-

GPS is mainly used for navigation and mapping like car-navigation system and Google Mapping while GIS is used to analyze the layered structure of a location like Mining, Urban development and land management.

GPS:-



GIS:-



Q No 31:-

(a) Global warming:-

Global warming is the long-term heating of the Earth's surface due to the human activities, primarily due to fossil fuel burning, CFCs and green house effect, trapping the heat in the Earth's

atmosphere.

Global warming is a wild beast that is continuously eating away Earth's suitable atmosphere. Its effects has caused such a damage to Earth at now it is being termed as Global Boiling.

This global boiling is the main cause of disappearing glaciers, rising sea levels, new pests, increases flooding and droughts. All these disaster are causing massive death tolls all over the world.

And this global warming is not natural at all.

It is the result of continuous interference of human in the natural healthy environment of Earth. Humans are continuously burning fossil fuel to generate energy and these fossil fuels like coal, gas and oil are the major emitters of CO_2 into the atmosphere. This increase

amount of CO_2 in the atmosphere causes the greenhouse effects to speed up and cause over warming of Earth atmosphere.

To curb the issue of global warming, deep cuts in emissions of CO_2 is required, but no major CO_2 emitter is willing to damage its industrial growth to do so.

(b) Origin of Universe:-

According to Astronomers, our universe formation is the result of Big Bang that occurred about 10 to 20 billion years ago.

Age of Universe:-

The age of the universe can be estimated by two ways.

- (a) By looking at the oldest stars and comparing it with our star
- (b) By measuring the rate of expansion of the universe and tracing back it to Big Bang.

DATE: ___/___/___

(c) Semi-conductors:-

Semi-conductor is a material that have the electricity conducting value in between the conductors (usually metals) like copper, silver, iron, and insulators like wood.

Types:-

There are 2 types of semi conductors

- ① Intrinsic semiconductor
- ② Extrinsic semiconductor.

Section I

Q No 81-

(a)

If in coded language BROTHER is QDGSNQA then in same language SISTER will be QDSRHR. Because the code is the inverse of the word where each letter of the host word is one step backward of the coded word.

(b)

probability of an event = $\frac{\text{Possible outcomes}}{\text{Total outcomes}}$

(i) 8 :-

Probability of 8 = $\frac{1}{12}$

(ii) Even numbers

There are 6 even numbers in the given series, So
Probability of Even No. = $\frac{6}{12} = \frac{1}{2}$

(iii) Perfect Square :-

There are 2 perfect squares in the series that are

4 perfect square of 2 &

9 perfect square of 3. So,

probability of Perfect square = $\frac{2}{12} = \frac{1}{6}$

DATE: ___/___/___

(iv) Negative numbers:-

Since, there is no negative number present in the series, So.

$$\text{Probability of Negative number} = \frac{0}{12} = 0$$

→ It means that it has no probability of occurrence.

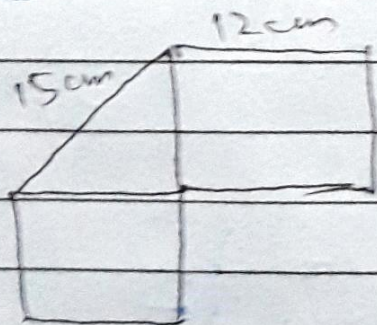
(v) Less than 13

Since, all the numbers are less than 13, So

$$\text{Probability} = \frac{12}{12} = 1$$

→ Probability is definite occurrence.

(c) Area and Perimeter:-



Triangle 1-

$$(\text{Hyp})^2 = (\text{perp})^2 + (\text{base})^2$$

$$(15)^2 = (12)^2 + (x)^2$$

$$225 = \frac{144}{4} + x^2$$

$$\sqrt{81} = \sqrt{x^2}$$

$$9 = x = \text{Base}$$

$$\text{Area of Triangle} = \frac{1}{2} b \times h$$

$$= \frac{9 \times 12}{2} = 54 \text{ cm}^2$$

DATE: ___/___/___

$$\begin{aligned}\text{Perimeter of triangle} &= a + b + c \\ &= 9 + 12 + 15 \\ &= 36 \text{ cm}\end{aligned}$$

Squares:-

①

$$\begin{aligned}\text{Area of square} &= a^2 \\ &= (12)^2 = 144 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Perimeter of square} &= 4a \\ &= (12)4 = 48 \text{ cm}\end{aligned}$$

②

$$\begin{aligned}\text{Area of square} &= a^2 \\ &= (9)^2 = 81 \text{ cm}^2\end{aligned}$$

$$\begin{aligned}\text{Perimeter of square} &= 4a \\ &= 4(9) = 36 \text{ cm}\end{aligned}$$

Total area:-

Area of triangle + Area of
Square ① + Area of
Square ②

$$\text{Area} = 54 \text{ cm}^2 + 144 \text{ cm}^2 + 81 \text{ cm}^2$$

$$\text{Area} = 279 \text{ cm}^2$$

Total perimeter:-

Perimeter of triangle + Perimeter
of square ① + ②

$$\begin{aligned}\text{Perimeter} &= 36 \text{ cm} + 48 \text{ cm} + 36 \text{ cm} \\ &= 120 \text{ cm}\end{aligned}$$

(a)

Mean - Mean is the average of all the numbers

$$\text{Mean} = \frac{15 + 15 + 16 + 16 + 16 + 17 + 17 + 18 + 19}{9}$$

$$= \frac{149}{9}$$

$$= 16.5$$

Median - Median is the middle number of the arranged series.

$$\text{Median} = 16$$

Mode - Mode is the most common number in the ordered series

$$\text{Mode} = 16$$

Range - Range is the largest number minus the smallest number.

$$\text{Range} = 19 - 15$$
$$= 4$$