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Subject: General Science & Ability

Date: 20.01.2025

Exam: Mocks

(PART-II)

(SECTION-A)

Q4.(a) Write a note on solar system.

Ans. • Definition:

The solar system, is a part of a large galaxy known as the Milky Way Galaxy.

• Located:

It is located in the one of the four arms of the Milky Way, known as the Orion Cygnus arm.

• Planets:

It has 8 planets, namely:
Mercury, Venus, Earth, Mars, Jupiter,
Saturn, Uranus, Neptune.

Among these,

1. Terrestrial planets → Mercury, Venus
and Earth.

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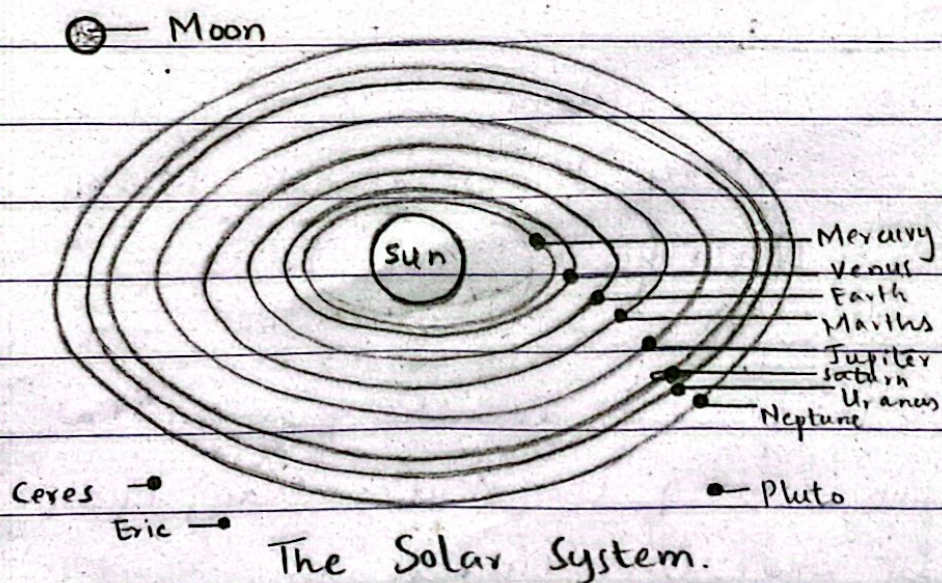
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2. Cold planets → Mars, Jupiter, Saturn
Uranus and Neptune.

3. Gaseous planets → Uranus and Neptune.

Center of the Solar system :

The sun is a giant star present at the center of the solar system. All the planets, dwarf planets, moons, etc, revolve around the sun.



Dwarf Planets :

The solar system also has a few dwarf planets, named Ceres, Eric, Pluto, Haumea and Maimai.

Moons :

There is only one moon in the solar system.

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Satellites :

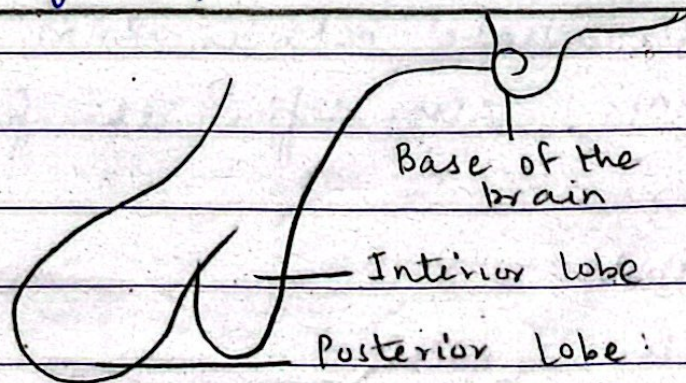
It has both artificial and natural satellites as well.

The solar system formed when the universe came into existence. It would take about 27,000 - 27,500 km to go from the sun to the center of the Milky Way, highlighting the massive size of the galaxy.

(b) Give the importance of the pituitary gland?

Allyo PITUITARY GLANDS :

Pituitary Glands are connected to the base of the brain and acts as a key component of controlling important mechanisms.



The Pituitary Gland

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• IMPORTANCE :

The pituitary gland is important due to its roles in :

1. Hormone regulation :

It regulates the hormones released by the body. It is connected to the brain, where it sends a message and manages control.

2. Control of secretions :

It is also responsible for the secretions that are released from the endocrine.

It assists the brain in managing some of the body's core processes.

c) Differentiate between RAM and ROM. Also define the following terms :

1. Nibble

2. USB

3. Mother board

Ans)

STORAGE SYSTEM OF COMPUTERS:

The data in a computer system is stored in the form of bytes.

The data is in a coded form of 0 and 1, i.e., binary language, which the computer is able to interpret.

The data is further stored into:

- 1) RAM.
- 2) ROM.
- 3) Hard disks

ROM**RAM****MEANING**

It stands for "Read Only Memory".

It stands for "Random Access Memory".

TYPE OF MEMORY

It is a permanent memory

It is a volatile memory.

CHANGE

The stored data cannot be changed

The stored data can be changed or

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or altered.

altered.

DATA ACCESS

Does not require for the computer to be turned on to access data.

Requires the computer setup to be turned on to access any data.

EXAMPLES

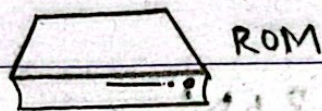
PROM

EPROM

EEPROM

Dynamic RAM

Static RAM



ROM



RAM

Define:

2.

USB :

USB stands for Universal serial Bus, that is used to store data and information.

3.

Nibble :

Also referred to as "Byte", are the smallest units of data storage in a computer system, which is store data in the form of

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0 and 1, i.e., binary coding.

(d) COP-29 targets to limit temperature rise to 1.5°C. Comment.

Ans)

COP - 29

COP is an annual meeting of its princely states and members, regarding the issues prevailing at the time. It holds discussions about the possible measures that can be taken in order to cater to the problems at hand.

COP - 29 held :

It was held in November, 2024, in the capital city of Azerbaijan called Baku.

Major takeaways of the meeting held in Baku :

1) Safety measures are needed to be taken to reduce the rising rate of global warming and ozone depletion.

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2) Strict action ^{must be} taken to prevent the rising level of toxins and toxic gases.

3) Cater to the pressing issue of the climate change due to global warming — that has also led to an increase in the Earth's temperature.

• Comments :

→ Although climate change is a widely discussed topic, yet not significant and abundant amount of effort is being intilled to cater to it.

→ If the measures prescribed by organizations like UNFCCC are seriously followed, a very huge can be made.

→ COP-29 showed the seriousness towards this pressing issue, and if the preventive measures are taken, can help combat climate change.



Q.3(c) Explain the phenomenon of earthquakes?

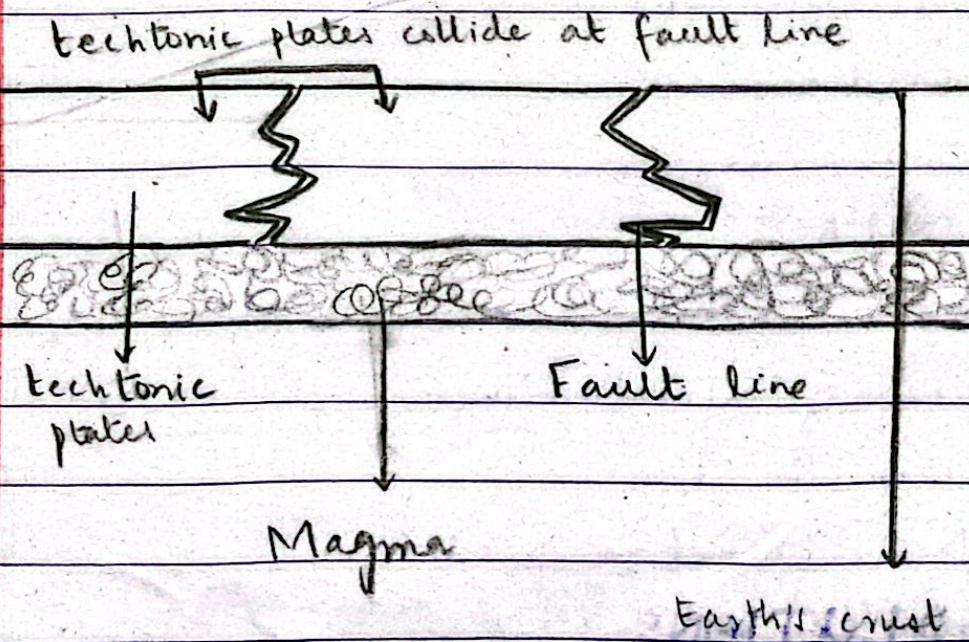
A(c).

EARTHQUAKES:

The sudden shaking of the tectonic plates, under the Earth's crust, causes a phenomenon known as earthquake.

PHENOMENA:

There are a total of 17 tectonic plates, that make up the entire Earth's crust. There are gaps between these plates, from which magma from the Earth's core can release in the form of lava.



EARTHQUAKE

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seismic energy, that is pent up beneath the Earth's surface, is released. This release causes an earthquake as the plates collide and diverge at the fault line.

→ Mariana Trench

It was formed due to an earthquake. It is called as the deepest place on Earth as it is more deeper than mount. Everest is high.

• CAUSES OF EARTHQUAKES :

1. Large water displacement.
2. Volcanic eruptions.
3. Landsliding.
4. Tsunamis

• IMPACTS :

Loss of human and animal life.
Loss of infrastructure.
Economic loss.
Displacement of people.

• SOLUTIONS :

One of the methods that can be used to avoid maximum

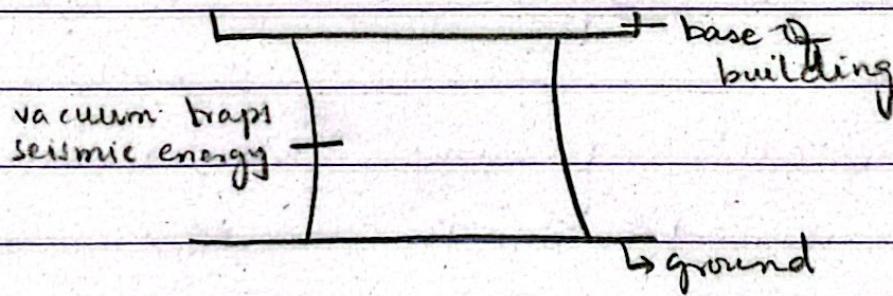
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damage in the event of an earthquake is called Base Isolation Technique

* Base Isolation Technique:

A vacuum is placed between the ground and base of the building. In this way, the seismic energy doesn't pass through the vacuum and cause damage on as massive a level.



(d) Explain the working of RADAR?

Ans. •

RADAR

A radar is an radioactive system. It is used to detect the distance, diameter and diameter of any object

in its range.

• Working of a RADAR:

→ It works on the detection of signals that are emitted by an surrounding object.

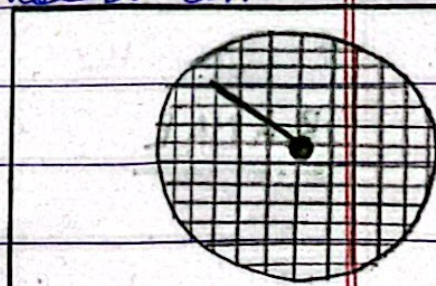
→ Any object in its vicinity can be seen on the radar as it will immediately detect its signals and work to pinpoint its exact location, distance and diameter on the map.

→ It is a very effective method of capturing any foreign or uninvited objects in any given region.

• Uses of RADAR:

They are extensively used in:

1. Spacecraft.
2. military.
3. Aerospace.
4. Airplanes and airports.



RADAR

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(b) Explain the following :

1. Atmospheric pressure ~~or~~
Atmospheric temperature
2. Humidity.

Ans.

ATMOSPHERE :

Everywhere and everything in our surrounding is made up of the atmosphere. An atmosphere consists of :

- 71% Nitrogen.
- 27% Oxygen.
- 1% Argon and other gases.

(A) Atmospheric Pressure / Temperature :

Atmospheric pressure is the speed at which the air blows.

It refers to the velocity of air.

It can be measured with the

help of an instrument called **Barometer**.

The speed and direction of the winds depends highly on its atmospheric pressure.

(2) Humidity :

Humidity is the measure of the water content in the atmosphere. Absolute humidity and relative humidity are its two major types. The basic difference in them lies on the level of water vapour in the air.



(SECTION - B)

Qno. 7. A told B that C is his father's nephew. D is A's cousin but not the brother of C. What is the relationship between D and C?

Ans. (b) Solution:

→ A told B → C is A's father's nephew.

On the other hand,
→ D is also another cousin of A.

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- But D and C are not brothers
- since D and C are both the cousins of A and not brothers, that means that the relation between C and D is of Cousins as well.

(c) Find the missing number in the

(i) sequence: 28 34 40

$$4 \xrightarrow{14} 18 \xrightarrow{22} \underline{\quad} \xrightarrow{25} 100 \xrightarrow{34} 180 \xrightarrow{40} 294 \xrightarrow{54} 448$$

4, 18, 40, 100, 180, 294, 448.

The missing number is 40

(ii)

$$1 \xrightarrow{7} 2 \xrightarrow{21} 10 \xrightarrow{37} 37 \xrightarrow{55} 101 \xrightarrow{\quad} \underline{\quad}$$

1, 2, 10, 37, 101, 156

The missing number is 156

(iii)

$$11 \xrightarrow{16} 17 \xrightarrow{24} 39 \xrightarrow{32} 85 \xrightarrow{\quad} \underline{\quad}$$

11, 17, 39, 85, 117

The missing number is 117

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(iv) $13, 24, 46, 90, 178, \underline{\hspace{2cm}}$

$13, 24, 46, 90, 178, \underline{354}$

The missing number is 354

(v) $4, \underline{100}, 144, 400, 900, 1764$

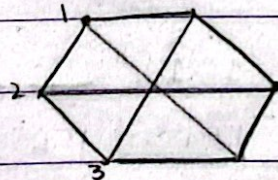
The missing number is 100

Qno 8. Draw and write the total number of lines of symmetry in hexagon, octagon and circle?

Ans.

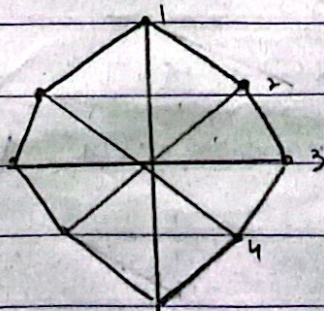
LINES OF SYMMETRY:

a. Hexagon:



There are 3 lines of symmetry.

b. Octagon:

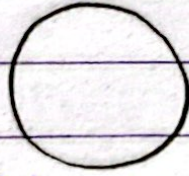


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(3)

There are 4 lines of symmetry.
Circle.



It is not having any vertices.
So it has no point of symmetry.