Daily Current Affairs Prelims Quiz 20-11-2023 & 19-11-2023 (Online Prelims Test)

1) Consider the following statements with respect to Rhododendron

1. Rhododendron is a genus of flowering plants that includes trees, shrubs and creepers.
2. Rhododendrons are indicator species for climate change and is an integral part of rituals and mythology.
3. Rhododendrons are endemic to North Temperate Zone of the Himalayas.

How many of the statements given above are correct?

a. Only one
b. Only two
c. All Three
d. None of the above

Answer : b

Rhododendron

In recent times the rhododendron's development and blooming schedules are affected by rising temperatures and changed precipitation patterns.

- Rhododendron is a genus of flowering plants that includes over a thousand species, including trees, shrubs and creepers.
- Rhododendron, meaning rose tree in Greek, is considered an indicator species for climate change.
- Rhododendrons were first recorded by Captain Hardwick in Jammu and Kashmir in 1776 where he spotted the Rhododendron arboreum.
- Rhododendrons are native chiefly in the North Temperate Zone, especially in the moist acidic soil of the Himalayas and into Southeast Asia to the mountains of New Guinea.
- ***Rhododendrons are not endemic to North Temperate Zone of the Himalayas and can be found across the world***.
- Darjeeling and Sikkim Himalayas comprise only 0.3% of India's geographical area but the region is home to 1/3rd (34%) of all Rhododendron types.
- The most characteristic aspect of the rhododendron is its vivid and striking flowers in red, pink, white, and purple hues.
- The rhododendron blossom is one of the Uttarakhand's numerous jewels and it is a representation of grace, tenacity and cultural value.
- The rhododendron's development and blooming schedules are affected by rising temperatures and changed precipitation patterns.

2) Consider the following statements with respect to Chimera in Biology

1. A genetic chimaera is a single organism composed of cells of more than one distinct genotype.
2. Chimerism can result from twin or multiple pregnancies evolving into a single foetus or a twin foetus being absorbed into a singleton.

3. Micro-chimerism is the presence of two genetically distinct cell populations in an individual or organ.

How many of the statements given above are correct?

a. Only one
b. Only two
c. All Three
d. None of the above

Answer : c

Chimera in Biology

Recently the scientists have succeeded in producing a live infant chimeric monkey.

- A genetic chimaera is a single organism composed of cells of more than one distinct genotype or genetic makeup.
- Genotype refers to the genetic makeup of an organism which describes an organism's complete set of genes.
- In a more narrow sense, the term can be used to refer to the alleles, or variant forms of a gene, that are carried by an organism.
- *The animal kingdom has several examples of varying degrees of chimerism*.
- **Examples of animals with chimerism** – Marine sponges are known to have up to 4 distinct genotypes in a single organism.
- The half-sider budgerigar, a type of common parakeet widely adopted as pets, has different colours on either side of its body due to chimerism.
- The anglerfish displays an extreme degree of symbiotic chimerism in which the male fish fuses with and is eventually absorbed into the female fish, mixing their genetic makeups into a single animal.
- **Natural chimaeras among humans** – Occur when the genetic material in one cell changes and gives rise to a clonal population of cells different from all the other cells.
- The fusion of two fertilised zygotes early in the embryonic stage can also lead to a condition in which two genetic makeups coexist in a single individual.
- Zygote is a fertilized egg cell that results from the union of a female gamete (egg, or ovum) with a male gamete (sperm).
- Chimerism can also result from twin or multiple pregnancies evolving into a single foetus or a twin foetus being absorbed into a singleton.
- ***There is evidence of individuals living with two blood types***.
- Blood-group chimerism during multiple births is relatively common.
- ***Microchimerism*** is a phenomena in which traces of the foetus's genetic material are observed in mothers' tissues many years after childbirth, resulting in two different genetic materials in a single person.
- **Chimaeras in laboratory settings** – Have been tried with rat-mouse, human-pig and human-cow.
- These were developed model systems that could 'generate' human organs of a suitable size, anatomy, and physiology.
- But they will pose biological and technical challenges when being used to grow human organs.
- **Chimaeras in non-human primates** – Recently the scientists have succeeded in producing a live infant chimeric monkey.
- In the long-tailed macaques (Macaca fascicularis), researchers extracted embryonic stem cells from one-week-old embryos.
- They modified the DNA in these cells to include a green fluorescent protein (GFP).
- These GFP-marked embryonic stem cells were then injected into recipient embryos that were implanted into surrogate female monkeys, which delivered six full-term offspring.

- The chimeric monkey had to be euthanized after 10 days for health reasons.
- Extensive genome-sequencing investigations conducted with its cells showed a high degree of chimerism in its tissues, including eyes, fingernails, brain, heart, kidney, liver, gonads, and placenta.

3) Consider the following statements with respect to Halal

1. 'Halal' is associated with Islamic dietary laws to refer to food that is procured, processed and traded in compliance with Islamic belief.
2. It is similar to 'jhatka' which involves delivering a powerful, single blow to the back of the animal's neck, decapitating it.
3. Regional coordinating committees of the Food Safety and Standards Authority of India (FSSAI) is the official regulator for the certification of halal products.

How many of the statements given above are correct?

a. Only one

b. Only two

c. All Three

d. None of the above

Answer : a

Halal

Recently the Uttar Pradesh government has ordered a state-wide ban on products being sold with halal certificates with immediate effect.

- Halal is an Arabic word that loosely translates to 'permissible' in English.
- In the Quran, the term 'halal' is used to designate the categories of lawful (and allowed) while 'haram' means forbidden and is used to designate the categories of unlawful (and forbidden).
- The two items of food that are most commonly considered haram (non-halal) are pork (pig meat) and intoxicants (alcohol).
- Even meats that are not pork must satisfy specific requirements relating to their source, the way the animal was killed, and how it was processed, to qualify as halal.
- Halal is particularly associated with Islamic dietary laws to refer to food that is procured, processed and traded in compliance with Islamic belief.
- It is similarly to the '***kashrut***' dietary rules followed by orthodox Jews, who only consume food that is 'kosher', which is permitted in Jewish law.
- In the Indian context, halal is mostly used to refer to the slaughtering technique used by Muslims.
- This involves killing the livestock or poultry through a single cut to the jugular vein, carotid artery and the windpipe with a sharp knife at the front of the neck.
- Animals must be alive and healthy at the time of slaughter, and all blood must be drained from the carcass.
- During the process, recitation of prayers, known as shahada, is also prescribed.
- ***Halal is in contrast to the 'jhatka' method, which is preferred by many Hindus and Sikhs.***
- Jhatka method involves delivering a powerful, single blow to the back of the animal's neck, decapitating it.
- Jhatka specifically involves stunning animals prior to slaughter, a practice that is not allowed in Islam.
- Most meat shops owned by Muslims announce their products as 'halal' whereas those owned by Hindus or Sikhs declare themselves as 'jhatka' establishments.
- The halal or haram go beyond food, depending on any consumable item, whether they are produced in accordance with Islamic law.

- ***Halal certificates*** simply tell a consumer whether a product meets the requirements for being considered halal or not.
- They do not indicate the presence of meat, or in and of themselves, have nothing to do with meat.
- ***India does not have an official regulator for the certification of halal products***.
- But there are various halal certifying agencies that provide companies, products or food establishments with halal certifications.
- Their legitimacy lies in their name-recognition among Muslim consumers as well as recognition from regulators in Islamic countries.

4) Consider the following statements with respect to Lunar Sample Return Mission (LSRM)

1. It aims to bring back rock or soil samples from the Tiranga point in Moon.
2. It is a proposed mission by the Indian Space Research Organisation (ISRO).
3. The Geosynchronous Satellite Launch Vehicle (GSLV) Mark-II will be used for the injection of the transfer and the re-entry modules.

How many of the statements given above are ***incorrect***?

a. Only one

b. Only two

c. All Three

d. None of the above

Answer : a

Lunar Sample Return Mission (LSRM)

Lunar Sample Return Mission (LSRM) is the proposed mission by the Indian Space Research Organisation (ISRO) to collect soil or rock samples from the Moon and bring them to Earth.

- Lunar Sample Return Mission (LSRM) aims to bring back rock or soil samples from the Shiv Shakti point in Lunar.
- The Shiv Shakti point is spot where Vikram had landed on the lunar South Pole.
- ***The proposed mission will have 2 separate launch vehicles***.
- The mission involves 4 modules that includes:
    1. Transfer module
    2. Lander module
    3. Ascender module
    4. Re-entry module
- The Geosynchronous Satellite Launch Vehicle (GSLV) Mark-II will be used for the injection of the transfer and the re-entry modules.
- Whereas the Launch Vehicle Mark-III will be used for the direct injection of the Ascender and the Lander module.
- A robotic arm mechanism will be used for the sample collection at the Shiv Shakti point.
- **Sample collection process** – The samples will be first transferred or loaded onto the Ascender module.
    - After the Ascender module lifts off from the lunar surface, it will dock onto the Transfer module.
    - Now another robotic arm will shift the samples from the ascender module to the re-entry module.
    - Lastly, the transfer and the re-entry modules are expected to return and land on Earth.
- The LSRM, like Chandrayaan-3, is planned for one lunar day (14 Earth days) and the expected launch date is in 2028.

5) Consider the following statements with respect to State of the Cryosphere Report, 2023

1. It was released by the Intergovernmental Panel on Climate Change (IPCC).
2. According to the report, Himalayas will be expected to lose 50% of its ice, if global average temperatures touch 2°C.
3. Cryosphere comprises Earth's frozen water in ice sheets, sea ice, permafrost, polar oceans, glaciers and snow.

How many of the statements given above are correct?

a. Only one
b. Only two
c. All Three
d. None of the above

Answer : b

State of the Cryosphere Report, 2023

The State of the Cryosphere Report, 2023 was recently released by the International Cryosphere Climate Initiative.

- Cryosphere is composed of Earth's frozen water in ice sheets, sea ice, permafrost, polar oceans, glaciers, and snow as ground zero for climate change.
- ***The State of the Cryosphere Report, 2023 is released by the International Cryosphere Climate Initiative.***
- It is a network of policy experts and researchers working to preserve the Earth's cryosphere.
- **Key findings of the report** – The Himalayas are also expected to lose 50% of today's ice if global average temperatures touch 2°C.
- Nearly all tropical glaciers, most mid-latitude glaciers and Polar Regions will disappear even if the world manages to limit global temperature rise to 2 degrees Celsius, above the preindustrial era.
- Sea ice around Antarctica hit an all-time low summer and winter record in 2023.
- Water temperatures in parts of the Arctic and North Atlantic were 4-6°C higher than normal.
- When permafrost thaws, it releases CO2 and methane emissions, which will cause a spike in temperatures even if human emissions reach zero.
- The Earth's ice sheets lost 7,560 billion tonnes of ice between 1992 and 2022. The last decade alone has witnessed the seven worst years of ice loss.
- Ice sheets in Greenland and parts of Antarctica could contribute between 12-20 metres of sea-level rise at 2°C.
- This 2°C will result in extensive, potentially rapid, irreversible sea-level rise from Earth's ice sheets and 3°C will further speed up this loss within the next few centuries.