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- 1) Consider the following statements regarding the Northeast Monsoon in India:
1. Unlike the Southwest Monsoon, the Northeast Monsoon is primarily driven by the reversal of pressure systems from land to sea, resulting in offshore winds over the Indian subcontinent.
 2. It brings heavy and widespread rainfall to the entire western coast and northwestern plains of India during the months of October to December.
 3. Tamil Nadu and Kerala receive a significant portion of their annual rainfall during this season.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2, and 3

- 2) Consider the following passage:

It is a melanistic form of a big cat, characterised by a dark coat due to increased pigmentation. In India, it has been reported in forest ecosystems, including the Western Ghats. It is not a separate species but a colour variant of an existing species.

The animal referred to in the passage is:

- (a) Snow Leopard
- (b) Black Panther
- (c) Indian Leopard
- (d) Clouded Leopard

- 3) Consider the following statements regarding Starlink satellites:

1. Starlink operates in Low Earth Orbit (LEO), resulting in significantly lower signal latency for broadband communication.
2. Starlink satellites remain fixed relative to a specific point on Earth's surface, eliminating the need for ground antennas to track them.
3. Starlink utilizes space-based optical laser links to transmit data directly between satellites.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

- 4) Consider the following statements with reference to pulses in India:

- I. India is the largest producer and consumer of pulses in the world.
- II. Under the Mission for Aatmanirbharta in Pulses, 100% procurement of Tur, Urad and Masoor at the Minimum Support Price (MSP) is guaranteed.
- III. The Mission aims to increase domestic pulses production to 350 lakh tonnes by 2030–31

Which of the following relationships among the above statements is/are correct?

1. Statement I supports the need to achieve self-sufficiency in pulses.



2. Statement II extends the assured 100% procurement beyond the three specified pulses.
3. Statements II and III together support the goal of enhancing domestic production and ensuring remunerative prices to farmers.

Select the answer using the code given below:

- (a) 1 only
- (b) 1 and 2 only
- (c) 1 and 3 only
- (d) 2 and 3 only

5) Consider the following statements with reference to INS Trishul:

1. It is a Talwar-class guided missile frigate of the Indian Navy.
2. It was built in India under the indigenous warship construction programme.
3. It participated in Exercise VARUNA, a bilateral maritime exercise between India and France.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Explanation

1) Answer: (C)

- **Statement 1 is correct:** During the winter months (October to December), high pressure develops over the Siberian region and northern plains, causing cool, dry winds to blow outward from land to sea (**offshore winds**). As these northeasterly winds traverse the Bay of Bengal, they pick up moisture and bring rain to peninsular India.
- **Statement 2 is incorrect:** The Northeast Monsoon does **not** bring rainfall to the western coast or northwestern plains. The western coast receives its rainfall primarily from the Southwest Monsoon (summer monsoon), while northwestern India receives winter rainfall mainly from **Western Disturbances** originating in the Mediterranean region.
- **Statement 3 is correct:** The southern peninsula—particularly **Tamil Nadu, coastal Andhra Pradesh, Rayalaseema, and parts of Kerala and Karnataka**—depends heavily on the Northeast Monsoon (also known as the winter monsoon) for a major share of its annual precipitation.
- **Therefore, option C is the correct answer.**

2) Answer: (B)

- **Melanism & Definition:** A **Black Panther** is not a distinct biological species. Instead, it refers to a melanistic color variant of existing big cat species—specifically the **leopard (*Panthera pardus*)** in Asia/Africa or the **jaguar (*Panthera onca*)** in the Americas.
- **Pigmentation:** The dark coat is caused by **melanism**, an over-development of the dark pigment **melanin** in the skin and fur, which often conceals the animal's characteristic rosettes.



- **Habitat in India:** In India, black panthers are melanistic Indian leopards. They are regularly reported in dense, moist tropical forests across the **Western Ghats** (such as Kabini in Karnataka, Anamalai in Tamil Nadu, and forests in Goa and Kerala) as well as parts of Odisha (such as Similipal).

Why Other Options Are Incorrect:

- **Snow Leopard:** Adapted to cold high-altitude mountain ranges with thick, light-grey fur; melanism is not observed in snow leopards.
- **Indian Leopard:** Represents the standard spotted morph with a light yellow-to-golden coat.
- **Clouded Leopard:** A distinct species found mainly in the Himalayan foothills and Northeast India, characterized by large, cloud-like coat markings rather than uniform melanism.
- **Therefore, option B is the correct answer.**

3) Answer: (B)

- **Statement 1 is correct:** Starlink operates in **Low Earth Orbit (LEO)** at low altitudes (~330–550 km). This drastically shortens the **physical distance** signals must travel compared to traditional **geostationary satellites** (~35,786 km), yielding significantly lower **latency** (~25–50 ms) suitable for **real-time applications**.
- **Statement 2 is incorrect:** Starlink satellites are in **Low Earth Orbit** and orbit the Earth rapidly (completing a full pass in roughly **90 minutes**). They are **not fixed** relative to a specific spot on Earth; therefore, **user terminals (ground antennas)** must **dynamically track** moving satellites and **seamlessly hand off** connections from one satellite to another.
- **Statement 3 is correct:** Modern Starlink satellites are equipped with **space-based optical inter-satellite links (lasers)**. This enables data to travel directly between satellites in a **vacuum at the speed of light**, facilitating high-speed communication over **oceans and remote areas** without requiring an **immediate ground station hop**.
- **Therefore, option B is the correct answer.**

4) Answer: (C)

- **Relationship 1 is Correct:** India's position as the **world's largest pulse producer** does not imply complete self-sufficiency. Domestic demand and supply gaps necessitate imports, making increased domestic production important for reducing import dependence.
- **Relationship 2 is Incorrect:** The 100% procurement assurance at MSP under the Mission for Aatmanirbharta in Pulses specifically **covers Tur, Urad and Masoor**. It does not extend the same assurance to other pulses such as Gram and Moong.
- **Tur, Urad, and Masur** are procured 100% under the **Price Support Scheme (PSS)**, which is a core component of the umbrella scheme **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)**.

Crop Category	Procurement Scheme	Procurement Ceiling (% of Production)	Pricing Basis
Tur, Urad, & Masur	Price Support Scheme (PSS) via NAFED and NCCF	100% of the state's production	Minimum Support Price (MSP)
Other Notified Pulses (e.g., Chana, Moong)	Price Support Scheme (PSS) under PM-AASHA	Up to 25% of a State/UT's production (can be extended with special approvals)	Minimum Support Price (MSP)



- **Relationship 3 is Correct:** Assured procurement at MSP provides farmers with greater price security, while the target of 350 lakh tonnes by 2030–31 encourages higher domestic output. Together, these measures aim to strengthen pulse production and improve farmers' income security.
- Hence, relationships 1 and 3 are correct.
- **Therefore, option C is the correct answer.**

5) Answer: (B)

- **Statement 1 is correct:** INS Trishul is a Talwar-class guided missile frigate commissioned into the Indian Navy in 2003.
- **Statement 2 is incorrect:** INS Trishul was built in Russia, not in India, under the Indo-Russian warship construction programme.
- **Statement 3 is correct:** Exercise VARUNA is a bilateral naval exercise between India and France, involving maritime cooperation and operational interoperability.
- **Therefore, option B is the correct answer.**

