



## UPSC CURRENT AFFAIRS MCQS 18-12-2023

### 1. Consider the following statements about bone marrow transplant:

1. Autologous transplants require stem cells from a family member while allogenic transplants use patients own stem cells.
2. Hematopoietic stem cells, essential for blood cell production, reside in both bone marrow and the bloodstream.
3. It is employed for addressing cancers like leukemia, myeloma, and lymphoma, blood and immune system disorders.

### How many of the above statements are correct?

- (A) Only one
- (B) Only two
- (C) All three
- (D) None

**Answer:** (A)

### Explanation:

A Bone Marrow Transplant (BMT), also known as a stem cell or hematopoietic stem cell transplant, is a medical procedure that involves replacing diseased or damaged bone marrow with healthy cells, either from the patient's own body or a donor. This procedure is primarily utilized in the treatment of cancers such as leukemia, myeloma, and lymphoma, as well as various blood and immune system disorders. Hence statement 3 is correct.

Stem cells, which have the unique ability to replicate and differentiate into different cell types required by the body, play a crucial role in this process. Hematopoietic stem cells, specifically important for blood cell production, are situated in the bone marrow and circulate in the bloodstream. The significance of hematopoietic stem cells becomes evident in the context of cancer and its treatments, which can harm these cells, affecting the production of red and white blood cells, as well as platelets. Hence statement 2 is correct.

Red blood cells carry oxygen, white blood cells are integral to the immune system, and platelets contribute to the clotting process. Thus, maintaining the health and functionality of hematopoietic stem cells is essential for overall blood and immune system function. There are two primary types of transplants



in the context of bone marrow procedures. The first is the autologous transplant, which entails utilizing the patient's own stem cells. These stem cells are collected before undergoing intensive cancer treatment, and following the treatment, they are reintroduced into the patient to restore the immune system and facilitate blood cell production. On the other hand, the allogenic transplant involves the use of stem cells from a donor. Typically, this occurs after the patient has undergone chemotherapy or radiation. The success of an allogenic transplant often hinges on finding a suitable donor match, which can include siblings, family members, or unrelated volunteers. This distinction in transplant types allows for tailored approaches to address individual patient needs and circumstances. Hence statement 1 is incorrect.

## 2. Consider the following statements regarding Logistics Ease Across Different State (LEADS) 2023:

1. The report categorizes Indian states and UTs into four segments.
2. In the North-East Group, Assam, Sikkim, and Tripura are acknowledged as Achievers

**Which of the statements is/are correct?**

- (A) Only 1
- (B) Only 2
- (C) Both 1 and 2
- (D) Neither 1 nor 2

**Answer:** (C)

**Explanation:**

- States' performance shows a positive shift as indicated by LEADS 2023 across crucial pillars: Logistics Infrastructure, Logistics Services, and Operating and Regulatory Environment. The report furnishes region-specific insights to facilitate informed decision-making and foster comprehensive growth.
- Key highlights from LEADS 2023 include notable performance distinctions among state groups:

**Coastal Group:**

Achievers: Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu.



Fast Movers: Kerala, Maharashtra.

Aspirers: Goa, Odisha, West Bengal.

**Landlocked Group:**

Achievers: Haryana, Punjab, Telangana, Uttar Pradesh.

Fast Movers: Madhya Pradesh, Rajasthan, Uttarakhand.

Aspirers: Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand.

**North-East Group:**

Achievers: Assam, Sikkim, Tripura. Hence statement 2 is correct.

Fast Movers: Arunachal Pradesh, Nagaland.

Aspirers: Manipur, Meghalaya, Mizoram.

**Union Territories:**

Achievers: Chandigarh, Delhi.

Fast Movers: Andaman & Nicobar, Lakshadweep, Puducherry.

Aspirers: Daman & Diu/Dadra & Nagar Haveli, Jammu & Kashmir, Ladakh.

Hence statement 1 is correct.

**3. Consider the following statements regarding somatic gene editing therapy:**

1. Somatic gene editing therapy modifies a patient's DNA to address diseases caused by genetic mutations.
2. Unlike germline gene editing, somatic gene editing ensures that the edited gene is passed on to future generations.
3. This technique is effective in treating disorders related to defective blood cells.

**How many of the above statements are correct?**

- (A) Only one
- (B) Only two
- (C) All three
- (D) None



**Answer:** (B)

**Explanation:** Somatic gene therapies are designed to modify a patient's DNA for the treatment or cure of diseases caused by genetic mutations. In a specific clinical trial, scientists extract blood stem cells from a patient, use CRISPR techniques to rectify the genetic mutation responsible for the production of defective blood cells, and then reintroduce the corrected cells into the patient. This process results in the production of healthy hemoglobin, thereby transforming the patient's blood cells. Hence statements 1 and 3 are correct. It's important to note that this treatment only impacts the patient's blood cells and not their sperm or eggs.

In contrast, germline human genome editing operates by altering the genome of a human embryo during its earliest stages and moves on to next generations. Hence statement 2 is incorrect. This intervention has the potential to affect every cell, not only influencing the individual who emerges from the edited embryo but potentially impacting future generations. Due to these far-reaching consequences, there are significant restrictions on the use of germline human genome editing to ensure ethical and safety considerations are upheld.

**4. Consider the following Sikh Gurus:**

1. Guru Amar Das
2. Guru Hargobind
3. Guru Ram Das
4. Guru Har Krishan

**Arrange the above Gurus chronologically.**

- (A) 1, 3, 2, 4  
(B) 2, 1, 3, 4  
(C) 1, 4, 3, 2  
(D) 2, 3, 4, 1

**Answer:** (A)

**Explanation:**

**1. Guru Nanak (1469-1539):**

The founder of Sikhism, Guru Nanak, born in 1469, preached equality and truth, rejecting labels of Hindu or Muslim. His travels across India and the Middle East aimed at denouncing religious rituals and the caste system.



**2. Guru Angad (1504-1552):**

As the second Sikh guru, Guru Angad, born in 1504, created Gurmukhi, fostered education, and introduced Mall Akhara, focusing on physical and spiritual exercise.

**3. Guru Amar Das (1479-1574):**

Born in 1479, Guru Amar Das fought caste prejudice, championed equality, and introduced the 'free kitchen' concept. He pioneered Anand Karaj, a special marriage ceremony.

**4. Guru Ram Das (1534-1581):**

Guru Ram Das, born in 1534, founded Amritsar and initiated the construction of the Golden Temple, promoting inclusivity with its four doors.

**5. Guru Arjan (1563-1606):**

Guru Arjan, born in 1563, compiled the Adi Granth, completed the Golden Temple construction, and faced execution for conspiracy against Jahangir.

**6. Guru Hargobind (1595-1644):**

Known as the 'soldier saint,' Guru Hargobind, born in 1595, advocated armed defense and organized a small army.

**7. Guru Har Rai (1630-1661):**

Born in 1630, Guru Har Rai focused on missionary work, meditation, and maintained the army created by his grandfather, Guru Hargobind.

**8. Guru Har Krishan (1656-1664):**

Guru Har Krishan, born in 1656, became a guru at five, helping during a smallpox epidemic and succumbing to the disease before turning eight.

**9. Guru Tegh Bahadur (1621-1675):**

Guru Tegh Bahadur, born in 1621, defended freedom of worship, resisted forced conversions, and was executed for refusing to convert to Islam.

**10. Guru Gobind Singh (1666-1708):**

The last human Sikh guru, Guru Gobind Singh, born in 1666, introduced the Khalsa, the 'five Ks,' and proclaimed Guru Granth Sahib as the future guru before his death in 1708. Guru Granth Sahib is revered as the 11th Sikh Guru.



### 5. Consider the description:

“The concept often translated as the "awakening mind" or "thought of enlightenment" holds a central place in Mahayana Buddhism teachings. This guiding principle directs practitioners toward a compassionate path characterized by altruism and selflessness. This commitment involves embarking on a journey of awakening and adopting the role of a bodhisattva, someone wholly devoted to the liberation of all beings. Within this framework, two distinct types of this commitment exist: conventional and ultimate.”

**The above paragraph describes which of them best?**

- (A) Parinirvana
- (B) Bodhisattva
- (C) Bodhicitta
- (D) Mahavihara

**Answer:** (C)

#### **Explanation:**

Within Mahayana Buddhism, the term bodhicitta, translating to "enlightenment-mind" or "the thought of awakening," refers to the mind directed towards awakening, characterized by wisdom and compassion for the well-being of all sentient beings. Bodhicitta is the defining attribute of a Mahayana bodhisattva, an individual dedicated to achieving Buddhahood, and the act of cultivating bodhicitta marks one as a bodhisattva. The Daśabhūmika Sūtra asserts that the emergence of bodhicitta is the initial stage in the journey of a bodhisattva. Various Mahayana Buddhist sources offer different interpretations of bodhicitta. Paul Williams describes it as a profound motivation to "strive for the complete cessation of suffering for oneself and others," arising from deep compassion. According to the Bodhisattvabhūmi, the bodhisattva generating bodhicitta aspires to attain supreme Enlightenment, benefit all beings, and guide them to final nirvana and Buddha-knowledge.