

## UPSC CURRENT AFFAIRS MCQS 03-09-2023

**Q1. Consider the following statements, with reference to ‘Hallmarking’:**

1. It is the accurate and official recording of the proportionate content of precious metal in precious metal articles.
2. Presently gold and diamond are the two precious metals that have been brought under the purview of Hallmarking.
3. Gold hallmarking is mandatory across India.

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

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

**Answer:** (a)

**Explanation:**

- Hallmarking is the accurate determination and official recording of the proportionate content of precious metal in precious metal articles. Hallmarks are official marks used in many countries as a guarantee of purity or fineness of precious metal articles. The principle objectives of the Hallmarking Scheme are to protect the public against adulteration and to obligate manufacturers to maintain legal standards of fineness. Hence, statement 1 is correct.
- In India, at present 2 precious metals namely gold and silver have been brought under the purview of Hallmarking. Hence, statement 2 is incorrect.
- The Bureau of Indian Standards (BIS) had implemented mandatory hallmarking of gold jewellery and artefacts in 256 districts from June 2021. After the 3rd phase, totally 343 districts are expected to be covered across the country for hall marking of the gold. The hallmarking centres have been setup in the newly notified 55 districts under the scheme for successful implementation. The authenticity and purity of the hallmarked gold jewellery items with Hallmark Unique Identification (HUID) number purchased can be verified by ‘verify HUID’ in the BIS Care app. Hence, statement 3 is incorrect.

**Q2. Which of the following statement best define the Baryonic Acoustic Oscillations (BAO) process?**

- (a) They are a pattern of wrinkles in the clusters of galaxies spread across the Universe.
- (b) They are the most powerful accelerator in the world, which boosts particles, such as protons.
- (c) It is an area in space that nothing, not even light, can escape from, due to force that pulls objects in space towards each other is so strong there.
- (d) It is a hypothetical celestial object, which expands outwards from a space–time singularity and emits energy.

**Answer:** (a)

**Explanation:** The BAO is a phenomenon that occurred at the early times of universe, before the decoupling of matter and radiation, where the perturbation of baryonic matter propagated as a wave. Baryon acoustic oscillations (BAO) are a pattern of wrinkles in the density distribution of the clusters of galaxies spread across the Universe. The baryon acoustic oscillations are imprinted on matter in the early Universe. When the Universe was in its infancy, matter was spread out in an almost uniform sea of particles, and gravity was trying to alter this by pulling large pockets of matter together to form galaxies. This was not an easy process because the matter heated up as gravity pulled it together. This created an outward pressure that pushed the matter apart again. As it expanded, however, it cooled and gravity started to pull it back together again. This interplay of gravity and pressure set up an oscillation that created the equivalent of sound waves. These spread outward in bubbles, carrying along some matter with them. Hence, option (a) is correct.

**Q3. Consider the following statements regarding gravity batteries:**

1. Gravity batteries store gravitational energy, which is the energy resulting from a change in height due to gravity, also known as potential energy.
2. These batteries work by using excess energy to raise a mass, generating gravitational potential energy, which is then converted into electricity through an electric generator.

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

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer:** (c)

**Explanation:** Gravity batteries store gravitational energy, which is the potential energy associated with the height of an object due to gravity. This potential energy can be converted into electricity. Gravity batteries operate by raising a mass, which generates gravitational potential energy. This potential energy can be harnessed and converted into electricity through an electric generator. Hence, both statements are correct.

**Q4. Consider the following statements regarding the 2023 Nobel Prize in Medicine or Physiology:**

1. It was awarded to Dr Svante Pääbo for his discoveries concerning the genomes of extinct hominins and human evolution.
2. The 2023 Nobel prize in medicine was awarded for research that has direct implications in the treatment of emerging zoonotic diseases like COVID-19.

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

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer:** (b)

**Explanation:** 2023 Nobel Prize in Medicine or Physiology: Dr. Karikó and Dr. Weissman were awarded the Nobel Prize for their “discoveries concerning nucleoside base modifications that enabled the development of effective mRNA vaccines against COVID-19”. mRNA stands for messenger RNA, a type of molecule that carries instructions from the DNA to a cell’s cytoplasm, where those messages are ‘read’ to produce various proteins. Hence, statement 1 is incorrect.

**Q5. 15th BRICS summit held in Johannesburg, 2023, led to the expansion of BRICS, making it BRICS-Plus. 6 new countries have been added to the grouping. Which of the following countries is NOT one of these new members?**

- (a) Argentina
- (b) Chile
- (c) Egypt
- (d) Iran

**Answer:** (b)

**Explanation:** 15th BRICS summit held in Johannesburg, 2023, led to the expansion of BRICS, making it BRICS-Plus. 6 new countries have been added



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to the grouping, i.e., Argentina, Egypt, Ethiopia, Saudi Arabia, Iran and UAE.  
Hence, option (b) is correct.