

Q: Consider the following statement regarding 2022 Nobel Prize in Chemistry:

1. Carolyn Bertozzi, Morten Meldal, and Barry Sharpless were nominated for this award.
2. They were awarded for the development of click chemistry and bioorthogonal chemistry.
3. Morten Meldal is only the fifth person to be awarded two Nobel Prizes.

Choose the correct option from the codes given below:

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

Ans: a

Explanation:

- Carolyn Bertozzi, Morten Meldal, and Barry Sharpless won the 2022 Nobel Prize in Chemistry for the **development of click chemistry and bioorthogonal chemistry**.
- While Barry Sharpless and Morten Meldal **laid the foundation for a functional form of chemistry ‘click chemistry’** in which molecular building blocks snap together quickly and efficiently. Carolyn Bertozzi took it to a new dimension and started utilising it in living organisms.
- Barry Sharpless was awarded the chemistry prize in 2001 and 2022. He last won the Nobel in 2001 for his work around chirally catalyzed oxidation reactions.
- Barry Sharpless is only the **fifth person to be awarded two Nobel Prizes**. He follows in the footsteps of double Nobel Prize laureates John Bardeen, Marie Skłodowska Curie, Linus Pauling and Frederick Sanger.

Q: Indian Navy Frigate INS Tarkash completed her 41-day long anti-piracy deployment in the Gulf of Guinea is situated in:

- a) Pacific Ocean
- b) Atlantic Ocean
- c) Mediterranean Sea
- d) Gulf of Mexico

Ans: b

Explanation:

- Gulf of Guinea (GoG) is situated in the eastern tropical Atlantic Ocean, the Gulf of Guinea region witnesses a significant amount of maritime crime and is an important shipping zone that has large volume of oil and gas transiting the area.
- The deployment of INA Tarkash included port calls at Dakar in Senegal, Lome in Togo, Lagos in Nigeria and Port Gentil in Gabon.

Q: Consider the following statement:

1. India has emerged as a largest producer of sugar.
2. India is the second largest exporter of sugar.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: c

Explanation:

- India has emerged as the world’s largest producer and consumer of sugar as well as the world’s 2nd largest exporter of sugar.
- In Sugar Season (Oct-Sep) 2021-22, a record of more than 5000 Lakh Metric Tons (LMT) sugarcane was produced in the country out of which about 3574 LMT of sugarcane was crushed by sugar mills to produce about 394 LMT of sugar (Sucrose).

- Out of this, 35 LMT sugar was diverted to ethanol production and 359 LMT sugar was produced by sugar mills.

Q: Consider the following statement:

1. Barry Sharpless coined the concept of click chemistry.
2. Azide is an organic compound.
3. Azide is utilised in the development of drugs, for mapping DNA and creating materials.

Choose the correct option from the codes given below:

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

Ans: d

Explanation:

- Barry Sharpless laid the foundation for a functional form of chemistry in which molecular building blocks snap together quickly and efficiently.
- Around the year 2000, he coined the concept of click chemistry, which is a form of simple and reliable chemistry, where reactions occur quickly and unwanted by-products are avoided.
- Shortly afterwards, Meldal and Sharpless, presented the copper catalysed azide-alkyne cycloaddition.
- Azide is an organic compound with the formula N_3 while an alkyne is a hydrocarbon containing at least one carbon-carbon triple bond.
- This is an elegant and efficient chemical reaction that is now in widespread use. Among many other uses, it is utilised in the development of drugs, for mapping DNA and creating materials that are more fit for purpose.
- To map important but elusive biomolecules on the surface of cells, glycans, Carolyn Bertozzi developed click reactions that work inside living organisms.
- These reactions are now used globally to explore cells and track biological processes.

Q: Consider the following statement regarding Constitution (Scheduled Castes) Order of 1950:

1. The order provided for recognising only Hindus as SCs.
2. Later amendment include Dalit who had converted to Sikhism or Buddhism.
3. Amendment were aided by the reports of Khosla Commission.

Choose the correct option from the codes given below:

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

Ans: a

Explanation:

- When enacted, the Constitution (Scheduled Castes) Order of 1950, initially provided for recognising only Hindus as SCs, to address the social disability arising out of the practice of untouchability.
- The Order was amended in 1956 to include Dalits who had converted to Sikhism and once more in 1990 to include Dalits who had converted to Buddhism.
- Both amendments were aided by the reports of the Kaka Kalelkar Commission in 1955 and the High Powered Panel (HPP) on Minorities, Scheduled Castes and Scheduled Tribes in 1983 respectively.
- On the other hand, the Union government in 2019 rejected the possibility of including Dalit Christians as members of SCs, rooting the exclusion on an Imperial Order of 1936 of the then colonial government, which had first classified a list of the Depressed Classes and specifically excluded "Indian Christians" from it.