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Daily MCQs: 20/09/2022

1. The Perseverance Rover to explore MARS atmosphere was launched by

- A. Japan Aerospace Exploration Agency (JAXA)
- B. National Aeronautics and Space Administration (NASA)
- C. Indian Space Research Organization (ISRO)
- D. European Space Agency (ESA)

2. With reference to the Nuclear Command Authority (NCA) of India, consider the following statements.

- 1. It is the authority responsible for command, control and operational decisions regarding India's nuclear weapons programme.
- 2. The Executive Council is the sole body which can authorize the use of nuclear weapons.
- 3. The Executive Council is chaired by the Chief of Defence Staff.

Which of the statements given above is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

3. With reference to the Global Environment Facility (GEF), consider the following statements.

- 1. GEF was established during the UN Climate Change Conference (COP21) in Paris to help tackle our planet's most pressing environmental problems.
- 2. It acts as a financial mechanism for some major international environmental conventions such as the Minamata Convention on Mercury, the United Nations Convention to Combat Desertification and the United Nations Framework Convention on Climate Change.

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

4. Which of the following countries share their borders with the Caspian Sea?

- 1. Kazakhstan
- 2. Uzbekistan
- 3. Turkmenistan
- 4. Azerbaijan

Select the correct answer using the code given below

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- A. 1, 3 and 4 only
- B. 1 and 3 only
- C. 1 and 4 only
- D. 1, 2 and 4 only

5. Consider the following statements about The Occupational Safety, Health and Working Conditions Code, 2020.

- 1. The Code seeks to regulate health and safety conditions of workers in establishments with 100 workers for premises where the manufacturing process is carried out using power.
- 2. The Code provides for the establishment of a Social Security Fund for the welfare of unorganised workers.
- 3. The Code fixes the maximum daily work hours for workers at eight hours per day.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Solutions:

- 1. Answer: **B**

Sol:

- NASA launched its **Mars Perseverance Rover** on an **Atlas V rocket** from Cape Canaveral Air Force Station in Florida in July 2020. The rover landed at Jezero Crater in February 2021.
- The Mars 2020 mission addresses high-priority science goals for Mars exploration, including key questions about the potential for life on Mars. The Perseverance rover is the centrepiece of NASA's Mars 2020 mission.
- The Mars 2020 rover mission is part of **NASA's Mars Exploration Program**, a long-term effort of robotic exploration of the Red Planet.
- Two other **NASA landers** are also operating on Mars — 2018's **InSight** and 2012's **Curiosity** rover.
- Perseverance is the biggest, most sophisticated Mars rover ever built — a car-size vehicle bristling with cameras, microphones, drills and lasers.
- The rover will hunt for **signs of habitable environments on Mars while searching for signs of past microbial life.**

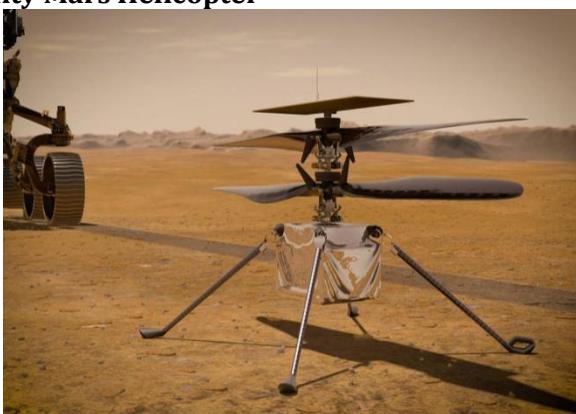


- The plutonium-powered, six-wheeled rover will drill down and **collect tiny geological specimens** that will be **brought back to the earth in about 2031 by a series of missions.**
- The analysis of Martian rocks on Earth will likely provide a reliable indication of whether life on Mars is feasible in the past or at present.
- Perseverance will explore the **Jezero Crater**, which is an ancient lakebed where microbial life could have developed.

MOXIE

- Perseverance carried a unique instrument, MOXIE or **Mars Oxygen In-Situ Resource Utilization Experiment** which **produced molecular oxygen from the thin Martian atmosphere for the first time**. It promises hope for future crewed missions that can rely on this technology for astronauts to breathe and return to Earth.
- On Mars, **carbon dioxide makes up ~96% of the gas** in the planet's atmosphere. **Oxygen is only 0.13%**, compared to 21% in Earth's atmosphere. Like a tree on Earth, MOXIE inhales carbon dioxide and exhales oxygen.
- To produce oxygen, **MOXIE separates oxygen atoms from carbon dioxide molecules**. It does so by using heat at a temperature of around 800 degrees Celsius, and in the process also produces carbon monoxide as a waste product, which it releases in the Martian atmosphere.

Ingenuity Mars Helicopter



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- The Ingenuity Mars Helicopter is a technology demonstration, carried by the Perseverance rover. A technology demonstration is a project that seeks to test a new capability for the first time, with limited scope.
- Ingenuity helicopter has made the **first powered flight on another planet**.
- It is significant given that **Mars' thin atmosphere** (which is **99% less dense** than Earth's) makes it difficult to achieve enough lift.

2. Answer: A

Sol:

- **Statement 1 is correct:** The Nuclear Command Authority (NCA) of India is the authority responsible for command, control and operational decisions regarding India's nuclear weapons programme. It was constituted in 2003.
- The Nuclear Command Authority comprises a **Political Council** and an **Executive Council**.
- **Statement 2 is incorrect:** The Political Council is chaired by the **Prime Minister**. It is the sole body which can authorize the use of nuclear weapons.
- **Statement 3 is incorrect:** The Executive Council is chaired by the **National Security Advisor**. It provides inputs for decision making by the Nuclear Command Authority and executes the directives given to it by the Political Council.

3. Answer: B

Sol:

- **Statement 1 is incorrect:** The Global Environment Facility (GEF) was established on the eve of the **1992 Rio Earth Summit** to help tackle our planet's most pressing environmental problems.
- The GEF is a unique partnership of 18 agencies — including United Nations agencies, multilateral development banks, national entities and international NGOs — working with 183 countries to address the world's most challenging environmental issues.
- **Statement 2 is correct:** It is a **financial mechanism** for five major international environmental conventions:
 - **the Minamata Convention on Mercury,**
 - **the Stockholm Convention on Persistent Organic Pollutants (POPs),**
 - **the United Nations Convention on Biological Diversity (UNCBD),**
 - **the United Nations Convention to Combat Desertification (UNCCD) and**
 - **the United Nations Framework Convention on Climate Change (UNFCCC).**
- GEF provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities. GEF projects address six designated focal areas: Biodiversity, Climate Change, International Waters, Ozone Depletion, Land Degradation and Persistent Organic Pollutants.

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4. Answer: A

Sol:



5. Answer: B

Sol:

The Occupational Safety, Health and Working Conditions Code, 2020

- The Code seeks to regulate health and safety conditions of workers in establishments with **20 workers** for premises where the manufacturing process is carried out using power,

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and **40 workers** for premises where it is carried out without using power. **Hence, statement 1 is incorrect.**

- **Contract workers:** The Code will apply to establishments or contractors employing **50 or more workers** (on any day in the last one year).
- Establishments covered by the Code are required to register with registering officers, appointed by the central or state governments.
- Welfare facilities, working conditions and work hours for different types of establishments and workers will be prescribed by the central or state governments through rules.
- It subsumes and replaces 13 labour laws relating to safety, health and working conditions. These laws include: Factories Act, 1948; Mines Act, 1952; Dock Workers Act, 1986; Contract Labour Act, 1970; and Inter-State Migrant Workers Act, 1979.
- The Code sets up **occupational safety boards at the national and state level** to advise the central and state governments on the standards, rules, and regulations to be framed under the Code.
- The Code **bars civil courts from hearing matters under the Code**. Therefore, the only judicial recourse for a person aggrieved under the Code is to file a writ petition before the relevant High Court.
- **Daily work hour limit:** The Code fixes the maximum daily work hours for workers at **eight hours per day**. **Hence, statement 3 is correct.**
- **Benefits for inter-state migrant workers:** The Code provides for certain benefits for inter-state migrant workers. These include: (i) option to avail the benefits of the public distribution system either in the native state or the state of employment, (ii) availability of benefits available under the building and other construction cess fund in the state of employment, and (iii) insurance and provident fund benefits available to other workers in the same establishment.
- **Database for inter-state migrant workers:** The Code requires the central and state governments to maintain or record the details of inter-state migrant workers in a portal.
- **Social Security Fund:** The Code provides for the establishment of a Social Security Fund for the welfare of unorganised workers. The amount collected from certain penalties under the Code will be credited to the Fund. **Hence, statement 2 is correct.**
- The Code **empowers the state government** to exempt any new factory from the provisions of the Code in order to create more economic activity and employment.