

Q: Consider the following statement regarding Tejas Mark-2:

1. It is an indigenous multirole combat jet.
2. It is a 4.5-generation fighter jet.
3. It is a double engine fighter jet.

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:

- Recently, the Cabinet Committee on Security (CCS) has cleared the Tejas Mark-2 project, a more capable version of the indigenous Tejas light combat aircraft (LCA).
- The Tejas Mark-2 is believed to be a more potent version of the indigenous Tejas multirole combat jet. Tejas is a single engine and highly agile multi-role supersonic fighter manufactured by the state-run Hindustan Aeronautics Limited (HAL).
- The Tejas Mark-2 has been described as a 4.5-generation machine that will not only have 70 per cent indigenisation (as opposed to the 62 per cent of the Mark IA), but will incorporate more advanced technologies to be built in India.

Q: Recently, India's environment ministry submitted its updated Nationally Determined Contributions (NDCs) on climate change under the Paris Agreement. Consider the following highlights:

1. India has updated one out of eight NDCs.
2. Reducing emissions intensity of its GDP by 45 percent by 2030, from 2005 level.
3. To achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy.

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: b

Explanation:

- India has updated three out of eight NDCs.
- One of them is reducing emissions intensity of its GDP by 45 percent by 2030, from 2005 level.
- India said that it will put forward and further propagate a healthy and sustainable way of living based on traditions and values of conservation and moderation, including through a mass movement for 'LIFE' – 'Lifestyle for Environment' as a key to combating climate change.
- The third update is to achieve about 50 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, with the help of transfer of technology and low-cost international finance including from Green Climate Fund (GCF).
- Other NDCs include adopting a climate-friendly and a cleaner path than the one followed hitherto by others at corresponding level of economic development; creating an additional carbon sink of 2.5 to 3 billion tons of CO₂ equivalent through additional forest and tree cover by 2030.

Q: Consider the following statement regarding the functioning of The Mars Oxygen In-Situ Resource Utilization Experiment (MOXIE):

1. Solid OXide Electrolyzer (SOXE) electrochemically splits the carbon dioxide-rich air into oxygen ions and carbon monoxide.
2. The oxygen ions are isolated and recombined to form breathable, molecular oxygen (O₂).

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:

- Inside Moxie, Martian air is first filtered in and pressurised.
- It is then sent through the Solid OXide Electrolyzer (SOXE), an instrument developed and built by OxEon Energy, that electrochemically splits the carbon dioxide-rich air into oxygen ions and carbon monoxide.
- The oxygen ions are isolated and recombined to form breathable, molecular oxygen (O₂).
- Finally, the gas is measured and tested for purity before being released into the atmosphere.

Q: Consider the following statement regarding Rule Curve:

1. Mullaperiyar dam is the first reservoir to have Rule Curve implemented.
2. It is a tabulation, which specifies quantum of storage of water or empty space to be maintained in a reservoir during different times of a year.
3. Water of the Mullaperiyar dam is a bone of contention between Tamil Nadu and Kerala.

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:

- The Mullaperiyar is the first reservoir to have Rule Curve implemented, in India.
- Rule Curve is a tabulation which specifies quantum of storage of water or empty space to be maintained in a reservoir during different times of a year, based on the rainfall data for 35 years.
- It is a ready-reckoner in decision-making for officials in charge of the dam, for smooth operation of shutters, especially for moderation of flood, during monsoon times without having to seek permission from the top hierarchical ladder.
- Water of the Mullaperiyar dam, has remained a bone of contention between Tamil Nadu and Kerala for over four decades.

Q: Consider the following statement regarding Cervical Cancer:

1. It is a form of gynecologic cancer that affects a woman's reproductive organs.
2. It is caused by the Human Papilloma Virus (HPV).
3. HPV virus infect women only.

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:

- Cervical cancer is a form of gynecologic cancer that affects a woman's reproductive organs.
- It begins in the cervix, which is the lower, narrow end of the uterus with early symptoms, being bleeding or discharge from the vagina that is not normal.
- Cervical cancer is caused by the Human Papilloma Virus (HPV), a group of more than 200 related viruses, some of which are spread through vaginal, anal, or oral sex. The virus can infect both men and women, leading to cancer if the infection is long-lasting.

- The cervical cancer is the second most common cancer among women in the country and is mostly caused due to HPV infection from poor genital hygiene, which includes unprotected sex, and multiple partners.
- HPV plays a major role in cancer and almost 90 per cent of cervical cancer is caused by it.