

Q: Consider the following statement:

1. India and plans to have 500 GW of non-fossil fuel-based electricity installed capacity by 2030.
2. The installed electricity generating capacity in the country at present is 259 GW.

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: a

Explanation:

- India has huge ambitions in energy transition and plans to have 500 GW of non-fossil fuel based electricity installed capacity by 2030, so that cleaner fuel comprises of 50% of the installed capacity mix by 2030.
- The installed electricity generating capacity in the country at present is 409 GW comprising of 173 GW from non-fossil fuel sources, which is about 42% of the total installed electricity generating capacity.
- For evacuation of power from the planned Renewable capacity by 2030, a robust transmission system needs to be in place in advance as the gestation period of wind and solar based generation projects is much less than that of associated transmission system.

Q: Consider the following statement:

1. The report “Climate Investment Opportunities in India's Cooling Sector” is published by IMF.
2. The rising heat across India can hit economic productivity.
3. The lost labour from rising heat and humidity could put up to 4.5 per cent of India's GDP at risk by the end of this decade.

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:

- Recently, the World Bank releases a report titled “Climate Investment Opportunities in India's Cooling Sector”.
- As per this report, extreme heat waves are increasing with alarming frequency across India in the past few decades and soon the country may become one of the first places in the world to experience heat waves that break the human survivability limit.
- The rising heat across India can hit economic productivity, observing that 75 per cent of India's workforce or 380 million people depend on heat-exposed labour, at times working in potentially life-threatening temperatures.
- By 2030, India may account for 34 million of the projected 80 million global job losses from heat stress associated productivity decline.
- The lost labour from rising heat and humidity could put up to 4.5 per cent of India's GDP at risk by the end of this decade.

Q: Consider the following statement regarding SpaceTech Innovation Network (SpIN):

1. It is India’s first dedicated platform for innovation, curation, and venture development for the burgeoning space entrepreneurial ecosystem.
2. ISRO has signed an MoU with Social Alpha to launch SpaceTech Innovation Network (SpIN).

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:

- Recently, the Indian Space Research Organisation (ISRO) has signed an MoU with Social Alpha, to launch SpaceTech Innovation Network (SpIN).
- SpIN is India’s first dedicated platform for innovation, curation, and venture development for the burgeoning space entrepreneurial ecosystem.
- Social Alpha is a multistage innovation curation and venture development platform for science and technology start-ups.
- The tie-up is a one-of-a-kind public-private collaboration for start-ups and SMEs in the space industry.

Q: Consider the following statement regarding central government initiatives of One District One Product (ODOP):

1. It aimed at fostering balanced regional development across all districts of the country.
2. The objective is to focus on District of the country as unit for converting into a manufacturing and export hub by identifying products with export potential in the district.
3. Department of Commerce, with the Department for Promotion of Industry and Internal Trade (DPIIT) as a major stakeholder.

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:

- ODOP initiative is operationally merged with '**Districts as Export Hub (DEH)**' initiative of the DGFT, Department of Commerce, with the Department for Promotion of Industry and Internal Trade (DPIIT) as a major stakeholder.
- Central Government has initiated **One District One Product (ODOP)** in all States/UTs of the country, as a transformational step towards realizing the true potential of a district, fueling economic growth, generating employment and rural entrepreneurship, taking us to the goal of Aatmanirbhar Bharat.
- The ODOP Initiative is aimed at fostering balanced regional development across all districts of the country, enabling holistic socio-economic growth across all regions.
- The objective is to focus on District of the country as unit for converting into a manufacturing and export hub by identifying products with export potential in the District.
- The Department is engaging with State and Central Government agencies to promote the initiative of ODOP, which is an on-going process.

Q: Consider the following statement:

1. Epsilon Iron Oxide can absorb millimetre waves with a powerful coercive force.
2. South Korea succeeded to produce pure epsilon iron oxide.

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: a

Explanation:

- The world's first method to repeatedly produce epsilon iron oxide, which can absorb millimetre waves with a powerful coercive force comparable to that of neodymium (Nd) magnets, was created by a research team at the Korea Institute of Materials Science (KIMS).
- Most magnetic materials that absorb ultra-high frequencies, a potential 6G frequency range, have high coercive epsilon crystal phases, such as iron oxide. It has only ever been generated in nanoparticles that are 50 nanometers or smaller up until this point.
- Japan succeeded to produce pure epsilon iron oxide through a batch-type wet process, but it involves a time-consuming multi-stage process, resulting in a low yield.