

Science & Technology

for

(UPSC PRELIMS- 2018)

By

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UPSC PRELIMS

2018

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(Energy)

1. With reference to solar power production in India, consider the following statements:

1. India is the third largest in the world in the manufacture of silicon wafers used in photovoltaic units.
2. The solar power tariffs are determined by the Solar Energy Corporation of India.

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

(Energy)

2. What is/are the consequence/consequences of a country becoming the member of the 'Nuclear Suppliers Group'?

1. It will have access to the latest and most efficient nuclear technologies.
2. It automatically becomes a member of "The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)".

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

(Energy)

3. In the Indian context, what is the implication of ratifying the 'Additional Protocol' with the 'International Atomic Energy Agency (IAEA)'?

(a) The civilian nuclear reactors come under IAEA safeguards.

(b) The military nuclear installations come under the inspection of IAEA

(c) The country will have the privilege to buy uranium from the Nuclear Suppliers Group (NSG).

(d) The country automatically becomes a member of the NSG.

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(Space Technology)

4. In which of the following areas can GPS technology be used ?

1. Mobile phone operations
2. Banking operations
3. Controlling the power grids

Select the correct answer using the code given below :

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

(Communication Technology)

5. The terms WannaCry, Petya and EternalBlue' sometimes mentioned in the news recently are related to;

- (a) Exoplanets
- (b) Cryptocurrency
- (c) **Cyber attacks**
- (d) Mini satellites

(Communication)

6. When the alarm of your smartphone rings in the morning, you wake up and tap it to stop the alarm which causes your geyser to be switched on automatically. The smart mirror in your bathroom shows the day's weather and also indicates the level of water in your overhead tank. After you take some groceries from your refrigerator for making breakfast, it recognises the shortage of stock in it and places an order for the supply of fresh grocery items. When you step' out of your house and lock the door, all lights, fans, geysers and AC machines get switched off automatically. On your way to office, your car warns you about traffic congestion ahead and suggests an alternative route, and if you are late for a meeting, it sends a message to your office accordingly.

In the context of emerging communication technologies, which one of the following terms best applies to the above scenario?

- (a) Border Gateway Protocol
- (b) **Internet of Things**
- (c) Internet Protocol
- (d) Virtual Private Network

(Communication technology)

7. Which of the following is/are the aim/aims of “Digital India” Plan of the Government of India? [UPSC (Pre) 2018]

1. Formation of India's own Internet companies like China did.
2. Establish a policy framework to encourage overseas multinational corporations that collect Big Data to build their large data centres within our national geographical boundaries.
3. Connect many of our villages to the Internet and bring Wi-Fi to many of our schools, public places and major tourist centres.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) **3 only**
- (c) 2 and 3 only
- (d) 1, 2 and 3

(Biotechnology)

**8. With reference to the Genetically Modified mustard (GM mustard) developed in India, consider the following statements :
[UPSC (Pre) 2018]**

1. GM mustard has the genes of a soil bacterium that give the plant the property of pest-resistance to a wide variety of pests.
2. GM mustard has the genes that allow the plant cross-pollination and hybridization.
3. GM mustard has been developed jointly by the IARI and Punjab Agric It al University.

Which of the statements given above is/are correct?

1 and 3 only

2 only

2 and 3

1, 2 and 3

(Miscellaenous)

9. “3D printing” has applications in which of the following? [UPSC (Pre) 2018]

1. Preparation of confectionery items
2. Manufacture of bionic ears
3. Automotive industry
4. Reconstructive surgeries
5. Data processing technologies

Select the correct answer using the code given below:

- (a) 1, 3 and 4 only
- (b) 2, 3 and 5 only
- (c) 1 and 4 only
- (d) 1, 2, 3, 4 and 5**

(Space)

10. With reference to India's satellite launch vehicles, consider the following statements:

1. PSLVs launch the satellites useful for Earth resources monitoring whereas GSLVs are designed mainly to launch communication satellites.
2. Satellites launched by PSLV appear to remain permanently fixed in the same position in the sky, as viewed from a particular location on Earth.
3. GSLV Mk III is a four-stage launch vehicle with the first and third stages using solid rocket motors, and the second and fourth stages using liquid rocket engines.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3
- (c) 1 and 2
- (d) 3 only

(Space)

11. With reference to the Indian Regional Navigation Satellite System (IRNSS), consider the following statements: [UPSC (Pre) 2018]

1. IRNSS has three satellites in geostationary and four satellites in geosynchronous orbits.
2. IRNSS covers entire India and about 5500 sq. km beyond its borders.
3. India will have its own satellite navigation system with full global coverage by the middle of 2019.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) None

(Miscellaneous)

12. Consider the following pairs : [UPSC (Pre) 2018]

Terms sometimes seen in news

- 1. Belle II experiment
- 2. Blockchain technology
- 3. CRISPR — Cas9

Context /Topic

- Artificial Intelligence
- Digital/ Cryptocurrency
- Particle Physics

Which of the pairs given above is/are correctly matched?

- (a) 1 and 3 only
- (b) **2 only**
- (c) 2 and 3 only
- (d) 1, 2 and 3

(IPR)

13. India enacted The Geographical Indications of Goods (Registration and Protection) Act, 1999 in order to comply with the obligations to

- (a) ILO
- (b) IMF
- (c) UNCTAD
- (d) WTO

(Particle Physics)

14. Consider the following phenomena :

1. Light is affected by gravity.
2. The Universe is constantly expanding.
3. Matter warps its surrounding space-time.

Which of the above is/are the prediction/predictions of Albert Einstein's General Theory of Relativity, often discussed in media?

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

THANK YOU



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