

Science & Technology for **(UPSC PRELIMS- 2016)**

By

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(Biotechnology)

1. In the context of the developments in Bioinformatics, the term 'transcriptome', sometimes seen in the news, refers to

(a) a range of enzymes used in genome editing

(b) the full range of mRNA molecules expressed by an organism

(c) the description of the mechanism of gene expression

(d) a mechanism of genetic mutations taking place in cells

(Health and diseases)

2. 'Mission Indradhanush' launched by the Government of India pertains to

- (a) immunization of children and pregnant women**
- (b) construction of smart cities across the country
- (c) India's own search for the Earth-like planets in outer space
- (d) New Educational Policy

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(Communication & Information)

3. 'Project Loon', sometimes seen in the news, is related to

- (a) waste management technology
- (b) wireless communication technology**
- (c) solar power production technology
- (d) water conservation technology

(Energy)

4. 'Net metering' is sometimes seen in the news in the context of promoting the

(a) production and use of solar energy by the households/consumers

(b) use of piped natural gas in the kitchens of households

(c) installation of CNG kits in motor-cars

(d) installation of water meters in urban households

(Defence)

5. Which one of the following is the best description of 'INS Astradharini', that was in the news recently?

- (a) Amphibious warfare ship
- (b) Nuclear-powered submarine
- (c) Torpedo launch and recovery vessel**
- (d) Nuclear-powered aircraft carrier

(Defence)

6. What is 'Greased Lightning-10 (GL-10)', recently in the news?

(a) Electric plane tested by NASA

(b) Solar-powered two-seater aircraft designed by Japan

(c) Space observatory launched by China

(d) Reusable rocket designed by ISRO

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(Health & Diseases)

7. Which of the following statements is/are correct?

Viruses can infect

1. bacteria
2. fungi
3. plants

Select the correct answer using the code given below.

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

(Communication & Information)

8. `SWAYAM', an initiative of the Government of India, aims at

- (a) promoting the Self Help Groups in rural areas
- (b) providing financial and technical assistance to young start-up entrepreneurs
- (c) promoting the education and health of adolescent girls
- (d) providing affordable and quality education to the citizens for free**

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(Energy)

9. In which of the following regions of India are shale gas resources found?

1. Cambay Basin
2. Cauvery Basin
3. Krishna-Godavari Basin

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**

(Energy)

10. On which of the following can you find the Bureau of Energy Efficiency Star Label?

1. Ceiling fans
2. Electric geysers
3. Tubular fluorescent lamps

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**

(Energy)

11. India is an important member of the 'International Thermonuclear Experimental Reactor'. If this experiment succeeds, what is the immediate advantage for India?

- (a) It can use thorium in place of uranium for power generation
- (b) It can attain a global role in satellite navigation
- (c) It can drastically improve the efficiency of its fission reactors in power generation
- (d) It can build fusion reactors for power generation**

(Energy & Environment)

12. Consider the following statements:

1. The International Solar Alliance was launched at the United Nations Climate Change Conference in 2015.
2. The Alliance includes all the member countries of the United Nations.

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

(Communication & Information)

13. Regarding DigiLocker', sometimes seen in the news, which of the following statements is/are correct?

1. It is a digital locker system offered by the Government under Digital India Programme.
2. It allows you to access your e-documents irrespective of your physical location.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2**
- (d) Neither 1 nor 2

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(Space)

14. With reference to `Astrosat', the astronomical observatory launched by India, which of the following statements is/are correct?

1. Other than USA and Russia, India is the only country to have launched a similar observatory into space.
2. Astrosat is a 2000 kg satellite placed in an orbit at 1650 km above the surface of the Earth.

Select the correct answer using the code given below.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2**

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(Space)

15. Consider the following statements:

The Mangalyaan launched by ISRO

1. is also called the Mars Orbiter Mission
2. made India the second country to have a spacecraft orbit the Mars after USA
3. made India the only country to be successful in making its spacecraft orbit the Mars in its very first attempt

Which of the statements given above is/are correct?

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

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(Communication & Information)

16. With reference to 'Li-Fi', recently in the news, which of the following statements is/are correct?

It uses light as the medium for high-speed data transmission.

It is a wireless technology and is several times faster than 'WiFi'.

Select the correct answer using the code given below.

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

(Energy)

17. Which one of the following is a purpose of `UDAY', a scheme of the Government?

- (a) Providing technical and financial assistance to start-up entrepreneurs in the field of renewable sources of energy
- (b) Providing electricity to every household in the country by 2018
- (c) Replacing the coal-based power plants with natural gas, nuclear, solar, wind and tidal power plants over a period of time
- (d) Providing for financial turnaround and revival of power distribution companies**

(Defence)

18. With reference to 'Organization for the Prohibition of Chemical Weapons (OPCW)', consider the following statements:

It is an organization of European Union in working relation with NATO and WHO.

It monitors chemical industry to prevent new weapons from emerging.

It provides assistance and protection to States (Parties) against chemical weapons threats.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

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About the Author

Dr. Ravi P. Agrahari, a Ph.D. from IIT Delhi, is a recipient of Junior Research Fellowship and Senior Research Fellowship from CSIR, Government of India. He worked as a research scientist in IIT, Delhi from 2015 to 2017. Mr. Agrahari is presently working as an independent consultant in the field of Environment, renewable and sustainable energy and biogas issues at the Bag Energy Research Society, Varanasi and Rene Foundation Thoothukudi (Tamil Nadu). He is an expert in the field of energy and has published various papers in many reputed international journals. He has attended many international conferences in Sweden and France. Dr. Agrahari is well known for his expertise in "Environment Science" and "Science and Technology" and has authored several books on the same for UPSC examinations. As a Teacher of UPSC aspirants for over 19 years, Dr. Agrahari has been associated with over 50 reputed coaching institutes in more than 15 states in India. He is also associated with various NGOs and Civil Societies for the welfare of weaker section and minority students.

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