

Indian Contributions and Advancement in Science & Technology (ICAST) Topic and their Scope

Junior Group (Class VI, VII & VIII)

Harnessing Solar Energy

Harnessing solar energy in India is crucial due to the country's growing energy needs, abundant sunlight, and commitment to reduced carbon emissions. It is a sustainable, eco-friendly, and renewable resource. Solar power plays a vital role in combating climate change and ensuring energy security. India's journey began with modest projects in the 1970s and made significant progress post-2010 with the launch of the National Solar Mission. Today, India ranks among the top global solar power producers, with notable projects like the Bhadla Solar Park in Rajasthan, Pavagada Solar Park, Tumkur, Karnataka, Ananthapuram Ultra Mega Solar Park, Anantapur, Andhra Pradesh. The Bhadla Solar Park is one of the largest solar parks in the world. Looking ahead, India aims to achieve 500 GW of renewable energy capacity by 2030.

Topics For MCQs (20 Questions – 1 Mark Each)	
Topic	Scope of the Topic
Harnessing Solar Energy	<ul style="list-style-type: none"> • Overview of the National Solar Mission • National Programme on High Efficiency Solar Photovoltaic Modules • PM Surya Ghar Muft Bijli Yojana • Use of solar thermal energy • Features of three biggest solar parks in India, viz. <ol style="list-style-type: none"> 1) Bhadla Solar Park, Jodhpur, Rajasthan 2) Pavagada Solar Park, Tumkur, Karnataka 3) Ananthapuram Ultra Mega Solar Park, Anantapur, Andhra Pradesh

Suggested References:

Students may refer to the following links for the preparation, keeping the scope of the topics in mind. However, these are just sample links. Students may also refer to other websites and reference material like books, periodicals, and Science articles related to the topics.

- <https://mnre.gov.in/solar-overview/>
- <https://mnre.gov.in/production-linked-incentive-pli/>
- <https://www.pmsuryaghar.gov.in/capacity-building>
- <https://mnre.gov.in/solar-thermal/>
- <https://www.blackridgeresearch.com/blog/list-of-top-largest-solar-plants-farms-parks-in-india>
- <https://www.energy.gov/eere/solar/solar-photovoltaic-technology-basics>

Indian Contributions and Advancement in Science & Technology (ICAST) Topic and their Scope

Senior Group (Class IX, X & XI)

Concept of Immunity in *Ayurveda*

Diseases manifest into abnormal body conditions, which at times can be fatal. Diseases are normally controlled by the use of medical interventions. But it will be ideal if we are resistant or immune to diseases. This concept of immunity was explained thousands of years ago in *Ayurveda*, referred to as *Vyadhikshamatva*. According to *Ayurveda*, immunity is not just about fighting off germs; it is about balancing the body and mind, keeping our inner light bright, and feeling healthy inside and out! An unhealthy lifestyle, inappropriate dietary habits, and a wrong daily regimen (*Dinacharya*) make us susceptible to diseases due to compromised immunity. *Ayurveda* gives importance to the inner strength of the body, referred to as *Ojas*. *Ayurveda* suggests having the right diet, sleeping well, performing regular physical and breathing exercises, and meditation as a means to maintain *Ojas*. Harboring a positive attitude towards life also contributes to immunity. *Ayurveda* approaches immunity as a means to lead a healthy life and face challenges at every stage of life.

Topics For MCQs (20 Questions – 1 Mark Each)	
Topic	Scope of the Topic
Concept of Immunity in <i>Ayurveda</i>	<ul style="list-style-type: none">• Concept and components of immunity in <i>Ayurveda</i>.• Factors that influence immunity.• Role of treatments like; <i>Rasayana</i>, <i>Panchkarma</i> etc.• Concept of <i>Ojas</i>, <i>Agni</i>, <i>Bala</i>, Auto-immune

Suggested References:

Students may refer to the following links for the preparation keeping the scope of the topics in mind. However, these are just a few suggested links. Students may also refer to other reference material like *Charak Samhita* and other websites; reference material like books, periodicals; and Science articles related to the topics.

- https://www.researchgate.net/publication/357535113_IMMUNITY-AYURVEDIC_PERSPECTIVES_AND_PRACTICES
- https://www.researchgate.net/publication/333532432_INTEGRATING_AYURVEDIC_CONCEPTS_OF_IMMUNITY_AND_ITS_ENHANCEMENT-A_REVIEW
- https://iamj.in/posts/images/upload/432_437.pdf
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC3336465/pdf/ASL-19-59.pdf>
- <https://jaims.in/jaims/article/view/962>
- <https://pmc.ncbi.nlm.nih.gov/articles/PMC3361919/>
- <https://www.jaims.in/jaims/article/view/1577/1562>