



GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY

26th ALL INDIA ESSAY CONTEST ON NUCLEAR SCIENCE & TECHNOLOGY



The Department of Atomic Energy (DAE) invites essays as per following details written in any official Indian language or in English from regular full time students studying for graduation in India (after 10+2), in any discipline, in an Indian university or an Institute deemed to be a university. The essays should be submitted by a single author. Those who have won prizes (including consolation prize) in our earlier essay contests are not eligible.

TOPICS

The essay should begin with an introduction and end with a conclusion. The introduction should highlight the multifarious achievements of DAE in basic sciences and nuclear technology development and how these have helped in overall societal development in the country. The introductory portion should not exceed **350 words** & should be followed by a detailed essay not exceeding **1500 words** in any one of topics given below. The conclusion should not exceed **150 words**. The entire essay should not exceed **2000 words**.

- The Future of Nuclear Power – An Approach to Sustainable Development :** • Nuclear power: Global and Indian Scenario • Comparison with global and developed nation average per capita power consumption • Projected demand of power in the next two decades in India • Nuclear Fuel Cycle – Front and back end • Spent Nuclear fuel management • Safety records in nuclear power generation • Nuclear waste management • Economics of nuclear power • Public perception about nuclear power
- Emerging Trends and Applications of Radioisotopes and Radiation techniques for Societal Benefits :** • Production and properties of radioisotopes • Applications of radiotracers and sealed sources in industry • Isotopes in hydrology and water resource management • Radiation processing of polymers for healthcare, environment and industry • Applications of radiation in agriculture and food processing • Radiation therapy for the treatment of cancer • Radiopharmaceuticals as diagnostic and therapeutic agents in medicine
- Accelerators in Nuclear Programme: Energy Security & Societal Applications :** **Part –I** • Introduction to India's Nuclear Energy Generation Programme • Concept and advantages of Accelerator Driven Sub-critical System (ADSS) • Type of accelerator required and its beam parameters • Safety Features of the Accelerator Driven Sub-critical Reactor • Thorium Utilization in ADSS • India's road-map & current Research & Development in ADSS. **Part –II** • Uses of Accelerator in the following areas: (a) Food Preservation (b) Medical Sterilization (c) Applications in rubber, cable & semiconductor industry etc. (d) Environmental Applications • Physical Principles of the applications, merits over conventional methods • Beam parameters for various applications & brief description of subsystems of such accelerators • Indigenous efforts for the development of such accelerators in India • Conclusions

HOW TO SEND THE ESSAY

The essay should be sent to the address given below directly by the contestant, along with bonafide studentship certificate from the Principal of his/her College/Institute. No essay will be accepted if sent by E-mail or Telefax. **The participant shall write his/her name, College/Institute and Residential address with Contact no and Email-ID of the Student as well as the Institute on a separate detachable sheet to facilitate communicating the results of the written Essay.** Name or address should not be written elsewhere on the text of the essay.

Note: Essays not conforming to the said guidelines shall be disqualified.

MODE OF SELECTION

After initial screening and evaluation, a maximum of thirty six essays will be selected and their authors will be invited to Mumbai in the last week of October 2014 for an oral presentation of the essays. Final selection will be made on the basis of both- performance in oral presentation and quality of the written essay. Candidates are permitted to make powerpoint presentations. **Only the candidates short-listed for oral presentation will be informed. No other correspondence in this matter will be entertained.** Those called for oral presentation in Mumbai shall be eligible for:

- To and fro AC 3-Tier rail fare by the shortest route. Claim for reimbursement of rail fare for journey performed by Rajdhani/August Kranti/Shatabdi Express will be restricted to AC 3-Tier by ordinary Express/Mail train.
- Boarding and lodging in the Guest House of BARC at Anushaktinagar, Mumbai during the authorized period of stay.

PRIZES

First Prize (3 nos.) : Rs.21,000/-
Third Prize (3 nos.) : Rs 7,000/-

Second Prize (3 nos.) : Rs 14,000/-
***Consolation Prize : Rs 3,000/-**

* To all those who make oral presentation but do not secure first, second, or third prize.

The prizes will be distributed on **Founder's Day** to be celebrated on **October 30, 2014**.

THE LAST DATE FOR RECEIPT OF ESSAY IS FRIDAY, AUGUST 01, 2014

Address for sending the essays:

Assistant Administrative Officer, Public Awareness Division, Department of Atomic Energy, Government of India, Anushakti Bhavan, CSM Marg, Mumbai 400 001.

Email:- aaopad@dae.gov.in

This information is also available on www.dae.gov.in