



GOVERNMENT OF INDIA
DEPARTMENT OF ATOMIC ENERGY

24th 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.

- 1. Fast Breeder Reactors for Sustainable Nuclear Power in India :** • Present PHWR programme of DAE. • Resource limitations for expansion of PHWR programme. • Fissile and fertile materials and closed fuel cycle in India. • Present status of Fast Reactor Programme. • Relative merits of fast breeder reactors. • Safety issues and economics of Fast Breeder Reactors
- 2. Societal Benefits of Non-Power Applications of Nuclear Science and Technology :** • Radioisotopes /radiations, their properties and production. • Radiopharmaceuticals for the diagnosis and treatment of various diseases-Principles and Practices. • Beam therapy and brachytherapy for the treatment of cancer and other diseases. • Radiation processing and modification of polymers for environment, agriculture, healthcare and industrial applications. • Enhanced food security through radiation processing of food items. • Applications of sealed radioisotopes and radiation sources for imaging, process control and troubleshooting in industry. • Radiotracer applications for process diagnosis and optimization in industry and environment. • Associated radiological safety issues.
- 3. Lasers, Plasmas and Electron Beams for Cleaner Environment and Sustainability :** • Introduction and unique properties of power beams (lasers, plasmas and electron beams). • Role of accelerated electron beams in treatment of polluted water, flue gases and food preservation. • Use of plasma torches in incineration of toxic wastes including nuclear and noxious medical waste. • Nuclear decontamination, surface cleaning and paint stripping using laser beams. • Role of laser beams and plasmas in future fusion energy generation. • Remote sensing and detection of atmospheric pollutants using lasers. • Use of power beams in remote decommissioning and waste treatment of radioactive nuclear equipment and fuel.

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 address on a separate detachable sheet only. 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 2012 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.15,000/-

Third Prize (3 nos.) : Rs 5,000/-

Second Prize (3 nos.) : Rs 10,000/-

***Consolation Prize : Rs 2,000/-**

*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, 2012.

THE LAST DATE FOR RECEIPT OF ESSAY IS TUESDAY, AUGUST 21, 2012

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.

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

विषय नंबर : E-60
तारीख : 29/9/2012
नियामक, विद्यार्थी कल्याण, नवसारी

Navsari
26/7/2012

For information & nec.
actions to all
Notice boards of
College & Hostel
notice boards.

NO. NAU/DSW/3061-89/2012

Navsari

Date: 26/7/12

Director
Student Welfare
N.A.U., Navsari.