

NEUTRINO OBSERVATORY PROJECT – Neutrinos are element particles which were till recently were considered massless. They are abundantly present in universe, but are still elusive. They pass our body daily in figures of billions, but still there is no considerable knowledge about them. India is a pioneer in neutrino physics with very first cosmic rays produced neutrinos was made in the Kolar Gold Fields experiment in 1965. New proposed project will be a huge underground facility with a huge detector.

NON COMMUNICABLE DISEASES or LIFESTYLE DISEASES– They include diseases like – Hypertension, Diabetes – India has highest number of diabetes patients in the world, Heart Attack, Obesity and Cholesterol. Burden of these diseases is increasing globally due to sedentary lifestyle, rising stress in life etc.

NON-IONISING RADIATIONS–Non-ionizing (or non-ionising) radiation refers to any type of electromagnetic radiation that does not carry enough energy per quantum to ionize atoms or molecules—that is, to completely remove an electron from an atom or molecule. Instead of producing charged ions when passing through matter, the electromagnetic radiation has sufficient energy only for excitation, the movement of an electron to a higher energy state. Nevertheless, different biological effects are observed for different types of non-ionizing radiation. Near ultraviolet, visible light, infrared, microwave, radio waves, and low-frequency RF (longwave) are all examples of non-ionizing radiation. Recently they have been in news due to their harmful effects discovered in mobile phone towers which also emit non-ionising radiations. Unlike ionizing radiations like - X-Rays and Gamma Rays, these don't strip the Electrons away from molecules in cell tissues and *hence cannot damage DNA and other biomolecules*. Further SAR – Specific Absorption Rate, defined as the rate of energy deposited in the biological systems – it has been fixed at 2w/kg for mobile phone radiations.

OCEAN ACIDIFICATION– Ocean acidification is the name given to the ongoing decrease in the pH of the Earth's oceans, caused by the uptake of anthropogenic carbon dioxide (CO₂) from the atmosphere. About a quarter of the carbon dioxide in the atmosphere goes into the oceans, where it forms carbonic acid. It has adverse effect on oceanic organisms and other things like Coral reefs in which coral bleaching happens.

OMEGA 3 FATTY ACIDS– Omega-3 fatty acids are considered essential fatty acids i.e. they are necessary for human health but the body can't make them, but are absorbed through certain foods. Omega-3 fatty acids play a crucial role in brain function, as well as normal growth and development. They have also become popular because they may reduce the risk of heart disease. Some fishes, nuts etc are good sources of these fatty acids.

PHYTOREMEDIATION– Phytoremediation describes the treatment of environmental problems (bioremediation) through the use of plants that mitigate the environmental problem without the need to excavate the contaminant material and dispose of it elsewhere. Phytoremediation may be applied wherever the soil or static water environment has become polluted or is suffering ongoing chronic pollution. Examples where phytoremediation has been used successfully include the restoration of abandoned metal-mine workings.

PROBIOTIC FOOD– Probiotic organisms are live microorganisms thought to be beneficial to the host