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Schedule

Registration No. 7208Place ORNTime 13:30Module 179

Classroom

Distance Learning

Classroom & Distance Learning

EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

INDEX TABLE

Q.No.	Page No.	Maximum Marks	Marks Obtained
1.			
2.			
3.			
4.			
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6.			
7.			
8.			
9.			

Total Marks Obtained

Remarks:

Signature of Examiner

INSTRUCTIONS:

1. Do furnish the appropriate details in the answer sheet (viz. Name, ID Number and Test Code)
The Candidate should fill the index table, especially for him/her.
2. In the left margin, she/he should write only question number and in the right margin, nothing should be written.
3. The page number should be coded by the candidate himself and the range of page number related to the answer of the question should be used to complete the index table.
4. All Parts of the questions should be written at one place.
5. No Supplementary sheet shall be provided by the management. So the candidate is advised to accommodate required information within the space provided.
6. The candidate need not write anything in his/her answer that derogates the dignity of an individual or an organization.
7. The candidate should respect the instructions, given by the invigilator.
8. The Examinee has to submit the answer sheet to the invigilator after completion of examination.
9. However, he/she is allowed to take away the question paper.

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Date 10/10/10

The first part of the paper discusses the importance of understanding the underlying mechanisms of the system. It is essential to identify the key components and their interactions, as this will provide a foundation for the subsequent analysis. The second part of the paper focuses on the development of a model that can accurately predict the system's behavior. This involves a series of steps, including data collection, model selection, and validation. The third part of the paper presents the results of the model, which show that the system's behavior can be effectively predicted using the proposed model. Finally, the paper concludes by discussing the implications of the findings and suggesting areas for future research.

3. We do not inherit the earth from our ancestors; we borrow it from our children.

Ans "A little of the Earth belongs to those who ~~are~~ ^{are} buried, a little to those who are living and a large portion belongs to those who are yet to be born" — Anonymous.

This edifying quote sums up the need of the day — to protect the Earth not only for the memory of our forefathers and our existence, but also for the children yet to be born, our posterity, so that they can live a life of happiness and well-being.

Earth is a living planet. And like all living beings, it needs to be in a state of balance and equilibrium. When our planet started facing an existential crisis — evidences seen in the form of criticality of living elements

such as melting of the glaciers, loss of equatorial forests, etc. — deliberations arose as to what ~~was~~ would be the future of our planet. In view of this, a UN conference was organized at Stockholm in 1972 which gave the blueprint for the future.

The Concept of Sustainable Development

The Stockholm conference led to the appointment of the Brundtland Commission which investigated deeply into the question of our future. Sensational as the findings were, the commission came up with the concept of "Sustainable Development" in its report OUR

COMMON FUTURE. It defined Sustainable Development as:

"The ability of the present generation to meet its demands without compromising on the needs of the future generation"

Simply put, sustainable development is the

ideology with the help of which we can give to our progeny an Earth which is better than the ~~one~~ ^{one} we have inherited.

To give effect to this ideology, many conferences, events & summits have been organized, ranging from the Rio Summit, 1992 to the latest Climate Summit which took place in September ²⁰¹⁴ at the UN, in New York.

Why focus on Sustainable Development?

We have spoken about the emergence of the idea of Sustainable Development till now. But what was the need for such ~~a~~ ^a concept?

Sustainable Development can be envisaged as a common area of ~~influence~~ ^{confluence} of three entities;

- (A) Society
- (B) Economy
- (C) Environment



Thus, the need for sustainable development arises from the need to have a healthy environment, a progressive & happy society and a growing economy.

A lot ^{many} studies were conducted during the 1960s - 70s which spoke of the deterioration of the Earth as the home of man and his environment. Some notable studies were;

- (A) Rachel Carson studied the reason for the decline in the avian population in the USA and concluded that due to the excessive use of chemical additives in agricultural fields, the birds ^{population was} adversely affected. She wrote the book "A Silent Spring" on this issue. Her findings became the basis of ~~all~~ the environmental laws in the USA.
- (B) A group of Scientists called ~~the~~ THE CLUB OF ROME carried out an empirical study called the limits to growth to assess whether there is

is a limit to the growth of human needs. The conclusion reached was that man is consuming 1.39 Earths as against 1 Earth which is available to him.

(c) Anthropocene is defined as that epoch in the Earth's history where man - with technology - has a greater influence on the Earth than the natural elements themselves. This period has started roughly ~~from~~ ^{at} about the same time as the Industrial Revolution of 1750s and some of the shocking findings are;

(i) The concentration of carbon dioxide in the environment has increased by over 22-30 times ^{from its pre-industrial levels} ~~this is~~ leading to global warming. ^{nations}

(ii) Islands like Tuvalu and Samoa are at the risk of getting submerged, much like Egypt, Bangladesh and Maldives are facing a threat of losing their lands.

(iii) The forest cover on the Earth has declined by almost 20% from the pre-industrial times.

In view of these shocking findings, it became abundantly clear to the leaders of the world that if corrective measures ~~would~~ ^{would} not ^{be} taken immediately, the future of mankind was at peril.

The Earth is a Living Planet

Swami Vivekananda has rightly said, "To protect is the duty of today, to preserve, the divine whisper of tomorrow".

The Earth has been a living entity for over billions of years, and it is our duty to maintain its existence for the future generations. In view of this, a new stream of Philosophy ^{& Ecology} is emerging called "STEWARDSHIP ETHICS". According to this philosophy, man is a ~~caretaker~~ caretaker of the environment and natural resources around him. He has been appointed by nature to protect, preserve and conserve the Earth.

and live-off its products in a sustainable manner. This field of study relies on the fact that the Earth belongs to the generations yet to come.

Similar studies and disciplines which focus on the need to conserve the planet for posterity are:

- (A) Ecofeminism - which stresses on the role of women in taking decisions at various levels as a woman is not only a caregiver and a mother, but she will also focus on the dimensions of equity and sustainability while making decisions.
- (B) Deep Ecology - This branch of Ecology stresses on the fact that every object on Earth - ~~whether~~ whether living or inanimate - has a value attached to it and ^{it} should not be judged on the basis of its ability to serve human interest.

Measures taken to make Earth a better place for our progeny.

In light of the crisis facing mankind, there are various measures that have been taken to protect the Earth from falling apart. Internationally, many conventions have taken place such as the UN Framework Conv. on Climate Change^(UNFCCC) and the Convention on Biodiversity (CBD) which have focussed on the need for sustainable development and making the Earth regain its ~~past~~ past glory. Some of the notable measures are;

- (A) The Kyoto Protocol — to check emissions by the developed countries of the world. It ~~was~~^{is} the first legally binding protocol in the world which aims to check the deleterious effect of climate change.
- (B) Montreal Protocol — on banning substances which cause ozone layer depletion. This helps protect the ozone layer which saves us from the harmful UV rays of the sun.

(c) The Aichi Targets - these focus on protecting ^{PS.} biodiversity and promoting ~~biodiversity~~ conservation. It was decided during the CBD Conference of Parties ~~next~~ meetings.

India has been an active participant in all these treaties and has taken steps to ~~promote~~ promote sustainable development of its ^{as well} own volition. The Jawaharlal Nehru National Solar Mission, the Water Mission, National Action Plan for Climate Change and the recently launched Emissions Trading scheme by Govt. of India are reflective of India's resolve to make the Earth a better place to live for us and our future generations.

Schumacher had once said, "Small is Beautiful". The need of the hour is to ^{revise this} ~~rethink~~ statement which focus on developing small-scale indigenous tech-

technologies which are environmentally safe and ecologically benign. In this regard, looking at minimization projects, microhydel power plants and smart mini cities can help alleviate the problems of unorganized, unplanned and haphazard development.

The Road Ahead

The time has come to realise our responsibilities towards our future generations. Every person has a right over this Earth - whether living, dead and/or unborn - and it is our duty to respect this right of the individuals. In this regard we must focus on the tenets of sustainable development and imbibe its principles in our lives. India is doing a commendable job by internalizing these virtues as can be seen in the tagline

of the 12th Plan Document - towards faster, sustainable and more inclusive growth - and in the programmes being carried out by the government such as SWACHH BHARAT ABHIYAN. The need of the hour is ~~is~~ that the world leaders should come together, set aside their differences, and reach a consensus - based solution to the common crisis so that we can progress as a race. If the Earth ~~of~~ collapses, there will be no land to fight for, no money to save and no ~~idea~~ ^{ideology} to promote. Let us give to the future generation a life which every person deserves owing to man's dignified existence. Let the future generation remember us in their history books as the "SAVIORS" and not the reckless "DESTROYERS".

⑥ Mangalyaan vs Poverty: Where should India focus?

ANS INDIA — A land like no other!

It has been 68 years since India gained independence, and we have come very far since then. For a relatively "infant" nation, we have one of the world's most vibrant and fully functional democracy, acc. to former NSA J.M. Dikshit. India provides the main workhorse for the knowledge hubs of the world such as Silicon Valley and Indians have won ~~the~~ Nobel Prizes in each of the categories present today. India has given to the world scientists and ~~refer~~ ^{leaders} like no other — Gandhi and Nehru are ~~still considered~~ revered throughout the world even today. On the other hand, India has the world's largest number of diseased and malnourished children; 180 out of 1000 women are drug child born and New Delhi — on

National Capital—has been declared as ~~the~~ one of the most unsafe places for women in the world.

On one hand, we have many reasons to rejoice — the latest being the recent success of our first Mars Orbiter Mission^(MOM) Mangalyaan; and ~~the~~ ^{on} the other, let us take a minute and think about those unfortunate children who do not get two-square meals a day.

Although India is respected world over for its high moral standing and ethical principles in the international arena, but it is also ~~divided~~ ^{divided} for not being able to secure a reasonable standard of living for its people. A life of dignity which every individual deserves by virtue of his or her being able to make a choice autonomous.

Mangalyaan — A symbol of Rising India

The recent success of India's MOM, Mangalyaan, is representative of ~~India's~~ the country's intellectual capabilities. India has chosen to give due importance to the field of Science & Technology and this is evident from the success of various institutions like the IITs, the Bhabha Atomic Research Centre, AIEMC and other institutions of repute.

India has shown its ^{cap-}ability in the field of Research & Development such as indigenous nuclear power reactors developed by BARC such as Kamini, Apsara, Cirus, etc. We ~~are~~ have also produced indigenous satellites such as METSAT-1 or Kalpana-1, ~~Chandrayaan~~ RESOURCE-SAT, etc. which have helped us in realising our true potential to grow. IITs and

AIIMS, IISc. and other research institutions have produced some of the best scientists and technocrats in the world. Some of them are Pankaj Kedia — the father of Intel ~~the~~ microchips — and ^{Sh.} CNR Rao — the ~~most~~ world-renowned ~~scientist~~ scientist.

Dr. M.S. Subramanian has leveraged the techniques of biotechnology and helped bring out sustainable food production in the country. Latest researches in the fields of biosciences, physical sciences and defence ~~tech~~ technology have made India a force to reckon with in the World. The contribution ~~to the~~ ^{by me} ~~for~~ field of Science and Technology to India's growth story cannot be emphasized enough. It is because of our abilities that Indians are the most sought after skilled workforce in the global scenario.

Poverty - A malignancy

Although India is ~~fast~~ flourishing in the fields of science, technology and economic growth, the benefits of these achievements are not percolating to all strata of the society. Inclusive development has not taken place and the benefits of development have been more exclusive - favouring certain sections of the society - than not. As per the Tendulkar Committee report, adopted by the Planning Commission, the Head Count Ratio in India (~~the~~ number of "poor" persons) is about 30% of the population. The Millennium Development Goals, set for 2015, have not been reached and the Infant Mortality rate is high at 44 per thousand. There is lack of proper healthcare facilities, sanitation and drinking

wake as a result of which the findings of the National Family Health Survey are not very surprising. According to NFHS-3, 46% of the children up to 3 yrs of age are malnourished and 58-60% of the women surveyed suffer from

Pernicious Anaemia. Due to our sociological set up, girl child and women suffer debilitating diseases and do not have access to education and employment opportunities.

The government has started various programmes which are directed anti-poverty interventions and some of the noteworthy initiatives are;

- A) MGNREGA - this has helped raise the rural income by providing unskilled employment.
- B) Janani Shishu Yojana - to promote institutional deliveries and reduce the maternal mortality rate.
- C) Saksham Shiksha Abhiyan - to promote universalisation of ~~primary~~ education and bridge the gender gap.

- (D) Schemes to ~~provide~~ promote financial inclusion and credit facility such as Pradhan Mantri Jan Dhan Yojana and Swabhimaan.

In view of the above facts, it is clear that India is different for different people. The BITARAT vs. INDIA divide exists and the subaltern view of India is very different from the view of the middle classes.

Mangalyaan vs. Poverty:- Is there a conflict?

Why do we see a conflict between the two? ~~Are~~ Are both mutually exclusive domains? Can India not prosper on both fronts?

Let me put a few facts about Mangalyaan ^{here} before you —

- (A) The ~~total~~ cost of the mission was ₹450 crores, less than the budget of a 3D Hollywood film.

- (B) The per kilometre cost of the MMR comes out to be ₹ 11.50 per km, lesser than the cost of hiring a taxi in Bangalore.
- (C) Mangalyaan is the first MMR in the world to succeed in the first attempt — a fact which speaks volumes about our scientific & engineering prowess.

I firmly believe that growth of Science & Technology can take place along with focus on ~~poverty~~ poverty alleviation. In fact, Science & Technology can help alleviate poverty in many cases. This is evident from the following ~~cases~~ scenarios:

- (A) Use of biotechnology and other scientific techniques can help overcome the issue of food scarcity in the future. High yielding variety of seeds and stress resistant plants do not require great capital input and lead to food security.

- (B) Use of technology to mainstream the person with disability — development of Braille software and autonomous locomotive systems can be manufactured to help ~~such~~ ^{such} persons access education and seek employment opportunities.
- (C) Bridging the Digital divide — access to IT by various sections of the society ~~including~~ ^{including} women, SCs, STs, etc. ~~can~~ ^{can} lead to their empowerment and can contribute to the increase in the overall GDP growth rate by 1.6-1.8%.
- (D) Telemedicine and e-Education initiatives can lead to a faster ^{growth} and healthier India.
- (E) R&D in medicine can be a major force to lift the people out of the vicious cycle of poverty perpetuated by their poor health conditions.

Thus, it can be clearly seen that promotion

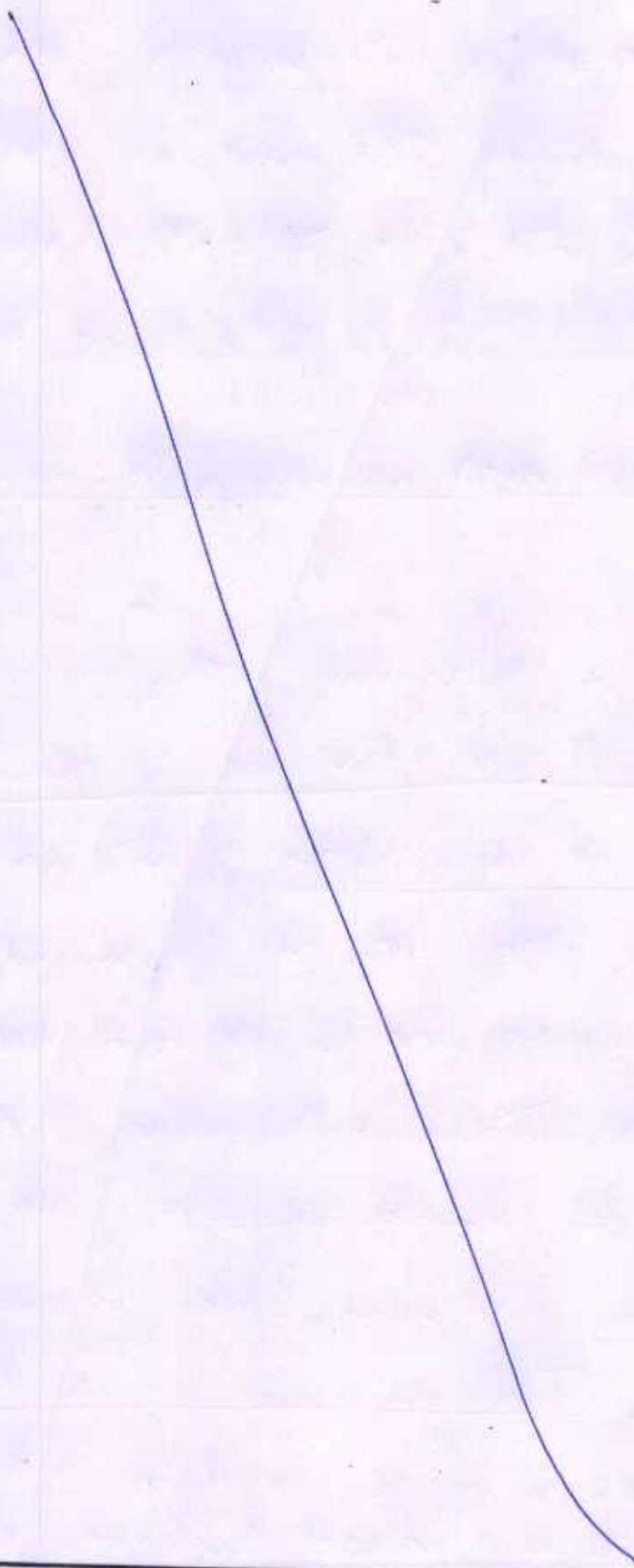
to science, technology, research & development and alleviation of poverty are not antithetical to one another and promotion to innovation can lead to reduction in poverty levels over a period of time.

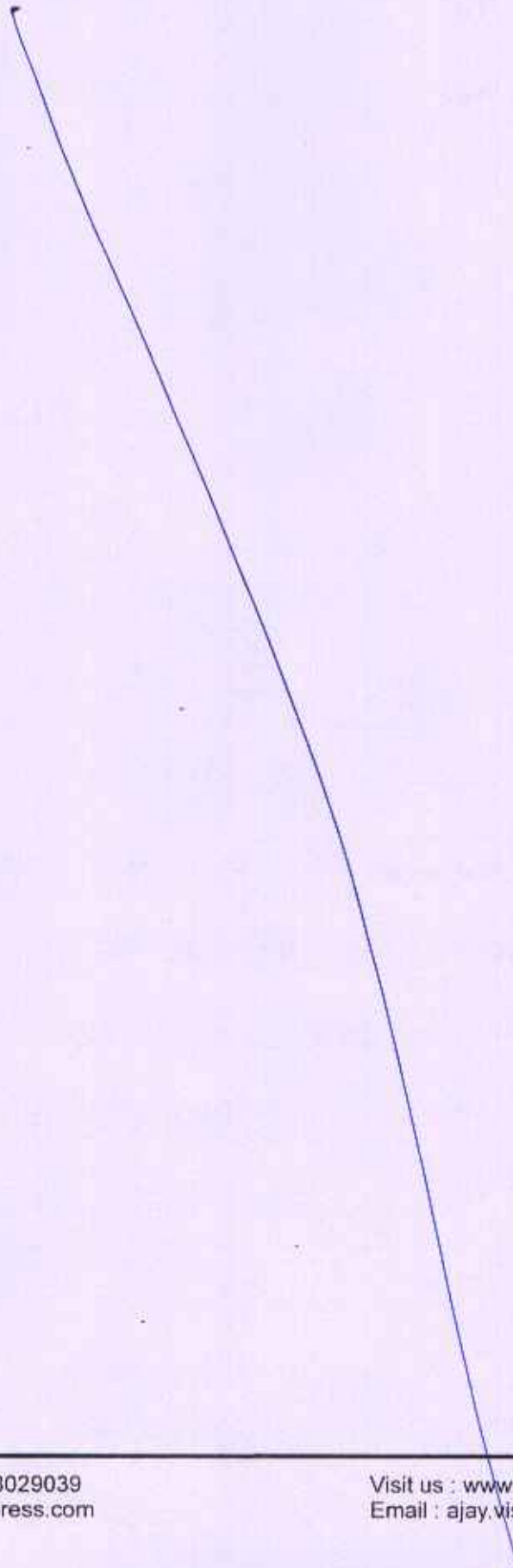
Future of India: Mangalyaan AND Poverty Alleviation

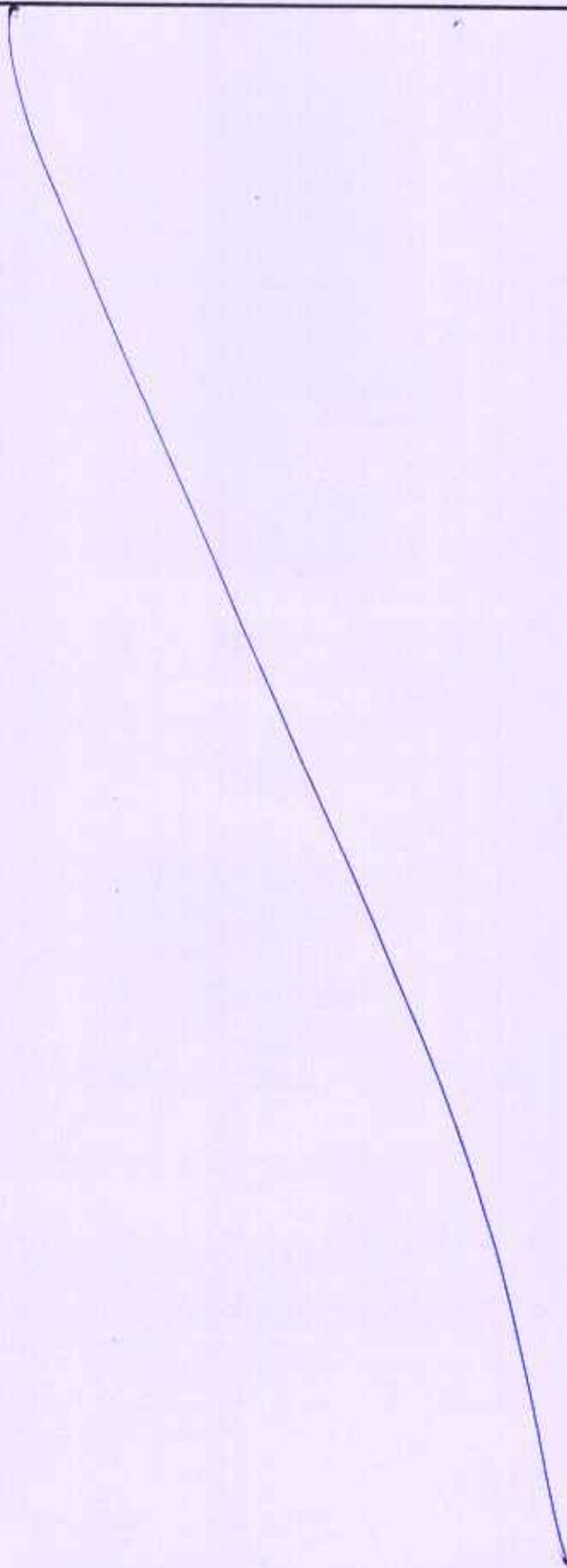
As we have seen, the future of our nation lies in leveraging our technological genius for the promotion of welfare of the people using our knowledge in the field of science for the benefit of the people is the need of the hour. Innovations which aim at lifting the people out of the ~~drain~~ ^{drain} of poverty and providing cost-effective and easily accessible technological solutions to the problems of poor literacy outcomes, sub-standard health indicators,

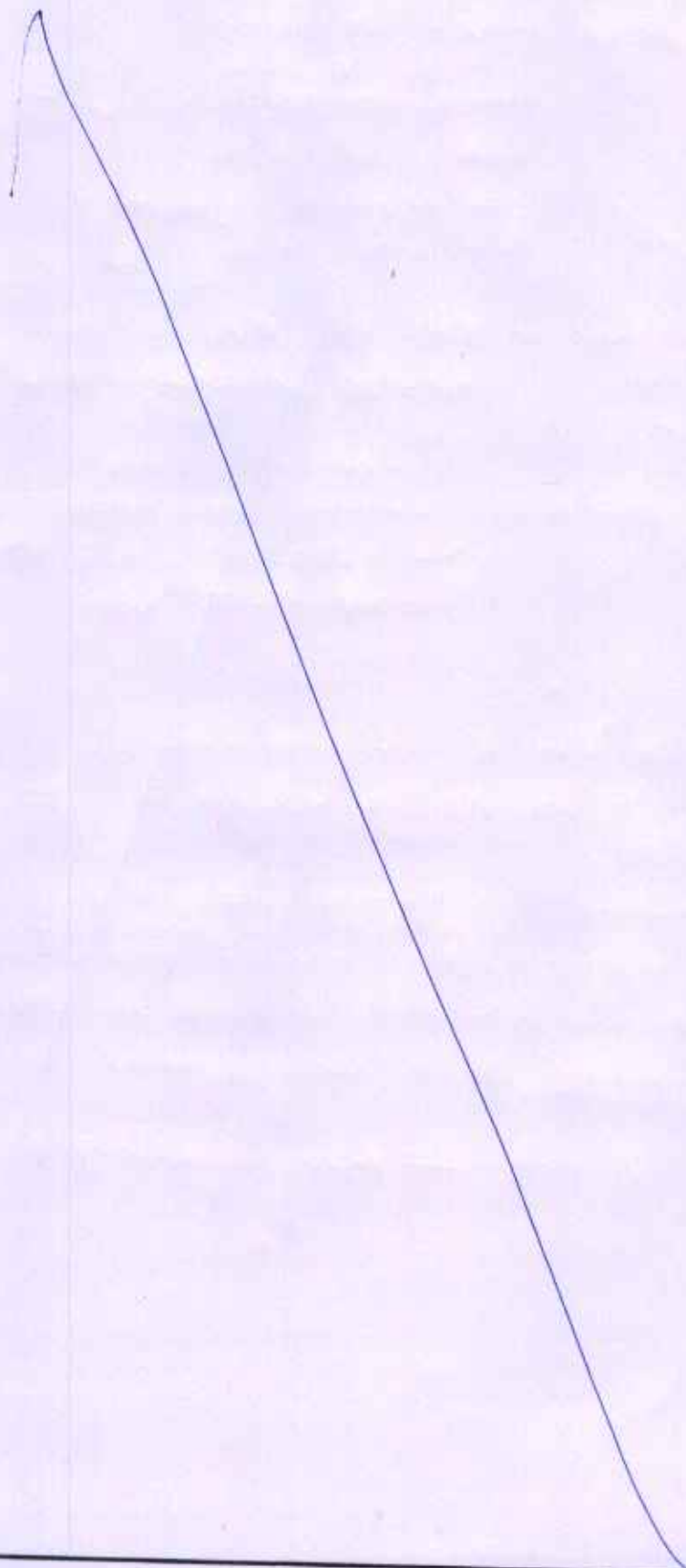
and structural discriminations faced by the people is the demand of ~~the present~~ ^{the present}. Science and Technology forms the solid base for a vibrant, fast-growing and inclusive India and advances in science must be viewed as an opportunity to ~~serve~~ ^{help} the people better and fulfill their aspirations.

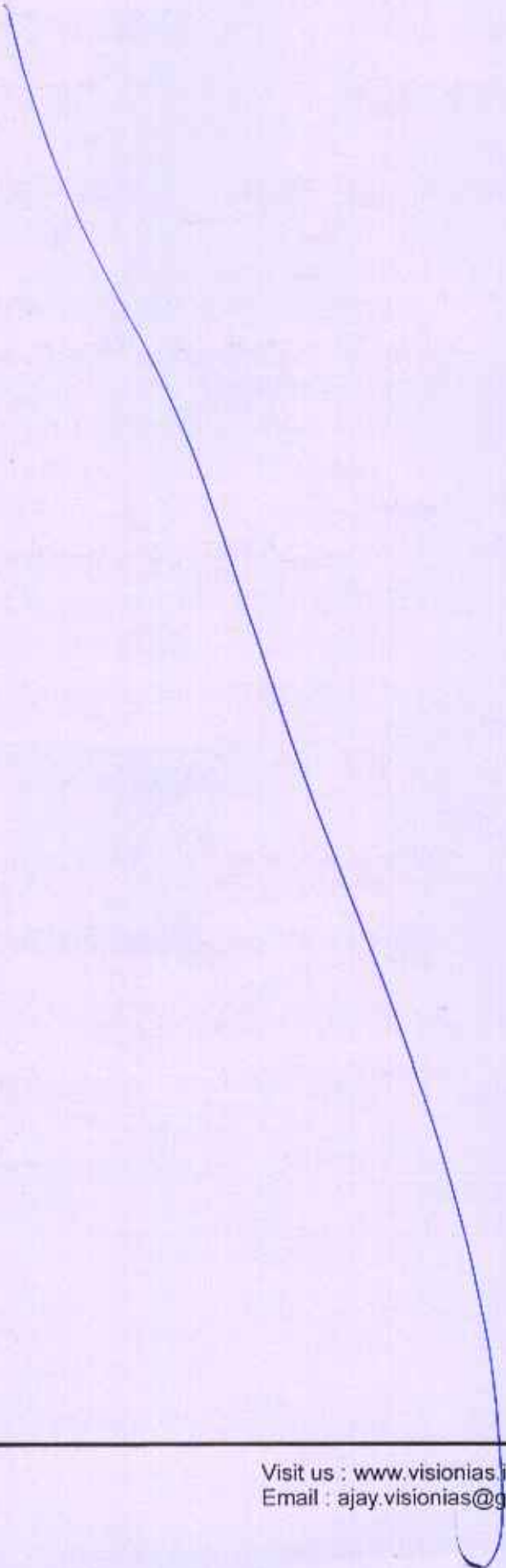
We ~~must~~ must always remember that a Mangalyaan isn't an exercise to seek information from outer space only; it is ~~an~~ an indication of the growth of scientific temperament in the nation which will work towards weeding out the malignancy of poverty plaguing India presently.











Rough

③④ Vivekananda's quote - To protect is the duty of today,
to preserve the divine whisper of tomorrow.

④⑤ bit of the earth...

- concept of sustainable dev. — Earth Summit

- need for sustainable dev

- ↳ Rachel Carson
- ↳ Club of Rome
- ↳ 1.39 earth's
- ↳ effect of anthropocene

- Earth as a living planet; rightful claim of the
future gen^s → concept of Stewardship

✓ Strategies of conservation & preservation

- ↳ Ecofeminism
- ↳ Deep Ecology

✓ Measures taken to protect the Earth

- ↳ Montreal Protocol
- ↳ Earth Summit - Kyoto and beyond } ①
- ↳ UNFCCC + CBD
- ↳ Schumacher: Small is beautiful

focus on the
world
- IE, COM

Endo-specific
- Migration
- hybrid

✓ Looking into the future:.

⑥ Mangalyaan vs Poverty

a) ~~Mangalyaan~~ India - situation

- ↳ econ. indicators
- ↳ health indicators
- ↳ social factors
- ↳ domestic economy
- ↳ int. standing

} ⊖ and ⊕

b) Mangalyaan - ISRO, BT, Atomic Energy, R&D in ~~space technology~~ R&D in physics, chem, etc.

c) Poverty - Issues

- ↳ Brandt vs Endra
- ↳ MMR, IMR, IHR
- ↳ Tendulkar committee reports
- ↳ NFHR - 3 finding

d) Is there a 'vs'?

- cannot devt. bc comprehensive?
- why do we need to neglect S&T for inclusive growth?
- promotion of S&T → impetus to India's standing as a soft power, (part of less for poverty alleviation, better relations with other orgs.)
- devt agenda not being impeded by Mangalyaan
- give statistics about mangalyaan.

e) future of India - Mangalyaan & Poverty alleviation