

## Essay Mock L

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Date - 12/12/2021

	Marks
Essay 1	
Essay 2	
Total	

IAS Mentorship by Reyesat Ali Sir

## Section A

1.

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② Innovation in Science and Technology is the way forward for Growth and security of the Nation

United States of America (USA) has consistently grown over last two century by 2-3% on average. Along with many factors for its success, there is one constant companion of USA i.e. Innovation and technology.

It started with American Revolution in 19th century. Electricity and computers were innovations of 20th century which brought unprecedented prosperity to USA.

In 21st century too, NASA, FAANG, super and quantum computers, technology for quick vaccine development not only bringing growth but securing lives of Americans.

Innovation and inventions have been driving events of history. Today technology has spread across all spectrum of human lives. Technological solutions are sought for agricultural, industrial, infrastructural growth. Big Data, Machine Learning, Artificial intelligence (AI), Genetic engineering etc are becoming new engines of growth.

Robotics, drones, space technology, I.T. are being used for border security, to fight terrorism, cyber threats. Even new technology and innovations holds key for food, water, income, energy security across the world. With its huge demographic advantage, India should be at forefront in advancing technology for its growth, security and prosperity of world & itself.

## Innovation matters

In simple terms, innovation is inventing new products or creating new processes using science. It helps in increasing productivity, saves time and cost. Innovation in production lines during Industrial revolutions helped Europeans to grow.

Innovation also gives comparative advantage over opponent. It was

because of technologically advanced artillery and weapon system, Europeans could protect their colonies in Asia and Africa.

Israel is perhaps the best exemplification of the essay topic. Though small country (area wise), it has grown due to its <sup>advanced</sup> agricultural and water-recycling technology. It has made its borders secure with advanced iron-dome system. Technology has given it tremendous global position and influence despite being resource scarce.

Another advantage of innovation and science is that it doesn't discriminate. Political, social, economic systems can be exclusionary, discriminatory. But technology if used in equitable way, it become good ~~state~~ <sup>tool</sup> and bring development of nation.

Innovation is the answer

India and the world is facing agriculture distress, industrial slowdown, supply chain disruption, environmental degradation, resource depletion. If we continue business as usual, we will be surely heading towards bigger mess.

Agriculture can achieve its past glory by use of technology in terms of GM crops, micro-irrigation, efficient resource utilisation such in precision agriculture. Innovative approaches like Climate smart agriculture, zero budget natural farming (ZBNF), organic farming etc hold potential to revive agriculture on modern lines.

Growth in agriculture

is sine-qua-non for food and nutrition security of country. Organising agriculture on scientific lines is need of the hour.

Secondly, Industrial revolution 4.0 (IR4.0) is future of industries in 21<sup>st</sup> century. IR4.0 is based on adoption of Artificial Intelligence (AI), Machine learning, Cyber Physical System (CPS). WEF research shows, India can double its GDP in next two decade with IR4.0.

Similarly smart infrastructure, smart cities, smart services will be driver of coming times. IoT (Internet of things), Edge computing, Data Analytics will become part of lives. New technologies like Blockchain is going to revolutionise financial and banking system. Bitcoin is the

new currency for many.

Green energy is the future energy. Energy security depends on science of renewables - solar, wind, e-Vehicles Hydrogen-energy etc. Innovation will make energy appliances efficient but cheap.

Climate-resilient systems, technologies, adaptation technologies are the answer for climate-change induced disasters like flash-flood, flash drought.

Innovative approaches like water meters, water-shed development, sponge city are solutions and way forward for water-crisis the world is facing. A simple design change of tap water by help saved millions of tonnes of water.



This is certainly not the exhaustive list. COVID-19 has given initial thrust in health, education, jobs for technology-  
Telemedicine, Tele-education, work from home  
are way forward for equitable development  
of social infrastructure. ~~and~~

Innovation can secure us

Fight against terrorism, extremism  
or naxalism can not be won by swords  
and spears. Monitoring social media,  
dark web to track these activities (funding, ~~protection~~)  
require advance tools of AI, machine-  
learning, TOR engines. Secure and  
auditable transaction of blockchain is the  
answer to check hawala transaction.

Cyber-security is emerging  
threat. Space is emerging as fifth

warfare space. Finding bugs in computer system and improving upon them (ethical hacking) can secure us from cyber threats. Whereas military satellites (ASAT) technology are way forward to safe space.

Similarly in the age of mini robots, mini drones, manpower is inadequate to secure India's border. CIBMS (Comprehensive Integrated Border management system), space satellites (eye in the sky), Robots (AI) advanced weapons are way forward to effectively manage borders. and ensure border security.

Is Innovation alone sufficient?

Innovation require capital. Research and development needs basic inputs, equipments and knowledge. In the world, not all countries can afford this luxury. It was evident during COVID-vaccine development. Advanced countries could develop vaccine and started hoarding (vaccine nationalism). <sup>This</sup> initial delay made health security vulnerable for many.

Second, innovation will bring creative destruction. It can alter social, political, economic systems. It was done by LPG ~~an~~ reforms for India. So the question is that is there political will to absorb the changes? Is society ready to experience changes in lives?

Third, for innovation to work, scalability of technology matters. It can happen with global collaboration. It also requires technology transfers keeping aside IPR issues at bay. Question is are ~~we~~ <sup>countries</sup> ready to do so? Warring of IPR for COVID-vaccines episode tells another story.

## 'I' for 'I' - Innovation for India

India is facing all the problems which can be thought of. For it technology can help solve these issue and bring growth.

As discussed above, India need capital, strong political will, global collaboration and technology transfer. For the recipe

of economic growth and security, it still requires one more ingredient i.e. culture of innovation in society:-

Indian society is generally considered as risk-averse. People want safety. Education serves purpose of employment for many.

However, new millennium is breaking this stereotype and rigidity. Culture of innovation, start-up, entrepreneurship is slowly gaining importance. India is 3rd largest country with startups.

Spirit of innovation needs to be percolated since childhood. It starts with family. Children should be encourage to ask question and break norms of conformity. St schools should provide curiosity to children. And college

should provide favourable environment where students are bold enough to persue an idea and break the status quo to bring new inventions.

Such a culture if fostered ~~by~~ at society, nation and global level, then Indians will show the world way forward for growth, development, security by using scalable, ethical innovation which will provide solutions.

This will give true meaning to 'Jai Jawan, Jai Kisan, Jai Vigyan' and build a new India for 21<sup>st</sup> century.

## Section B

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[1] The Good of the individual is contained  
in the good of All

The chief guest of Independence Day was supposed to give lessons on entrepreneurships. However she decided to do an activity. She gave balloons to each of 100 students and asked them to write their name on it.

Later those balloons were kept in a classroom. She asked students

to find their balloon within 5 minutes. Panic rush through student and they started searching their names like headless chicken. Finally few of them got, rest couldn't.

Now the entrepreneur asked them to get a balloon and give to student whose name was written on it. Magically this time everyone was cheerful with balloon of their names written, in their hand within 5 minutes.

This was lifelong lesson Sudha ma'am gave to students. If you give to others, you will eventually get what you need. That is happiness of individual is contained is happiness of all the student. The good of individual is contained in good of all.



This teaching of happiness of all is ingrained in Indian society and History. Chandragupta Maurya could build vast empire with Chanakya's teaching. The lesson of 'happiness of king lies in happiness of its subjects' kept the great monarch humble and welfare-inclined.

India's vast religious diversity could sustain because each religion ~~knows~~ knows comity and tolerance towards all religions can help them sustain and prosper. It is perhaps at base of Indian secularism in dictum of 'Sarva Dharma Sambhav'.

Altruism, Charity, other-regardingness has been cherished value in Indian society. It still preaches collectivism to the whole world.

On other spectrum, some economic and social system promote 'individualism'. It may bring short term benefits or gain but in long term and wider scale, collective welfare is desired.

Capitalism has brought prosperity but it has been accused for deep inequality, environment degradation and unsustainable consumption. In this system not everyone grows.

On other hand equitable distribution of resources among all is necessary for social justice. Everyone will get benefitted. Individual's basic needs will be taken care of. It would enable him/her to persue more in life.

When individual grows and becomes successful, he gives back to society to help other help grows. It creates social acceptance. People respect him and get motivated. It generates goodwill. This is why corporates like TATA is regarded highly among people.

If person become arrogant, it / creates resentment among people.

At individual level, it helps in conflict resolution. When goal of society is aligned with individual then it becomes easy for decision making. For example, if a civil servant gives priority to public interest over private gains, it helps both civil servants and society at large (in terms of public welfare).

At societal level, we can only progress if all sections take part in development process. Inclusivity of all sections irrespective of caste, gender, race, ethnicity is must. Vivekanandji has aptly put that for 'golden bird like India to fly, it cannot do so only one wing' (Importance of gender equality)

On economic scale, few industries growing at expense of environment pollution is unsustainable. With ecofriendly approaches, practices, triple bottom philosophy (Profit, people, environment) company can prosper and bring avenues of growth for society.

A stronger nation means a strong state. Commitment to nation building by state will eventually bring growth for states.

On global scale, the world is facing issues of climate change, global warming, terrorism, fundamentalism, refugee crisis, pandemic induced disruptions. These issues are so complex and huge that single nation cannot alone deal with them.

It requires global collaboration, political will, thinking beyond national identities. Entire world can be peaceful when all countries work together to address these challenges. Commitment to Paris deal not only bring safe climate for world but also for the nation individually.

In such scenarios, only national interest can push to make short term decisions like vaccine hoarding, vaccine nationalism. While WHO's GAVI, India's 'Vaccine Maitri' programmes are testimony

that universal vaccination can only bring stability. No one is safe until everyone is safe.

However, this altruistic philosophy of good of one is contained in good of all raises few questions. Who decides collective good? Is collective good always 'good'? Where does this leave space for personal growth, aspirations? Who should have upper hand in case of conflict between individual and societal morality?

If society and collective good is sacrosanct, then no one would have questioned regressive practices of sati, untouchability, discrimination. However it has been shackled in the past

and is being done ~~to~~ now.

If ~~so~~ farm activities are good for all then how country would get agripreneurship? How the scope of individual growth fits in the equation?

The answer lies in leadership. Individual with critical thinking, vision can direct the course of event and change the meaning of goal previously set.

In past great men like Rajaram Mohan Roy, BR Ambedkar, Mahatma Gandhi did so. Gandhiji changed meaning of independence struggle to truth, non-violence which became collective good for Indians. Today our constitution defines what collective good is i.e. social, economic political justice, liberty, equality, fraternity.

The way forward lies in ~~creating~~ building good leaders with good characters. Vision, Compassion, dedication to value of collective welfare should be ingrained in every children. The onus for the same lies with family, society, schools.

India and the world needs value-based education which promotes critical thinking, innovation, visionary approach. They should relinquish greed selfishness, individualism for greater good of collective welfare.

Future needs 'global citizens' who believes in 'Vasudhaiva Kutumbkani'. This idea will always push to create safe, poverty-hunger free world, gender-equitable



# U.P.S.C.

Society . peaceful and prosperous  
world.