

## ECONOMIC GEOGRAPHY + HUMAN GEOGRAPHY + RESOURCES

Time Allowed: 3 hrs.

Max. Marks: 250

Q.	Marks	Instructions to Candidate
1.	4.5	<ul style="list-style-type: none"> <li>• There are 20 questions; all questions are compulsory.</li> <li>• The number of marks carried by a question is indicated against it.</li> <li>• The paper contains 3 Sections; First Section has direct questions from core concepts, while Second Section has questions from wide range of books and study material and the Third Section has inter-disciplinary and application based questions that require knowledge and information of other subjects as well.</li> <li>• Answers to questions no. 1 to 5 should be in 150 words, answers to questions no. 6 to 15 should be in 200 words, whereas answers to questions no. 16 to 20 should be in 250 words.</li> <li>• Keep the word limit indicated in the questions in mind.</li> <li>• Answers must be written within the space provided.</li> <li>• Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.</li> </ul>
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*[Handwritten Signature]*  
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Rohit Lodha

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## Section - A

Q1. Discuss the role of fertility as a component of population dynamics and elaborate on its various measures. (10 Marks)

Ans Fertility determines the rate at which a population adds on to itself. In a crude form, it tells the number of children, a woman of reproductive age supposedly has in her lifetime.

Role of fertility as a component of pop<sup>n</sup> dynamics

1. It forecasts the trends going on of births in a nation.
2. It can be used as an indicator to judge spatial population dynamics and make policies as per it.
3. The govt can use this data to judge the socio-economic development of various areas as fertility decreases with increasing education, especially among women folks.

It determines Present and future Population

The various measures to judge fertility include-

(a) Crude Birth Rate - It is the total number of <sup>live</sup> children born per 1000 of population

$$CBR = \frac{\text{No of live children born}}{\text{Total Population}} \times 1000$$

Good

Remarks

good

(b) General Fertility Rate - It takes number of women of reproductive age (15-49 yrs) as base, as against total population in CBR.

$$\text{GFR} = \frac{\text{No. of live births}}{\text{Population of women of reproductive age (15-49)}} \times 1000$$

It is a better measure compared to CBR as it considers women of reproductive age as base.

(c) General Marital Fertility Rate - mostly used

$$= \frac{\text{No. of live birth}}{\text{Pop<sup>n</sup> of married women of reproductive age}} \times 1000$$

US

(d) Total Fertility Rate - This determines the average number of births a woman is expected to have. India has achieved a TFR of 2.2 as per NFHS IV.

(e) Gross Reproductive Rate - It shows how many girl babies, potential future mothers would be born to 1000 women of child bearing age.

(f) Net Reproductive Rate - It is used to indicate generational replacement.

Thus, fertility is an important component of studying population dynamics.

Remarks

Q2. Although, India is blessed with an increasing demographic dividend, however, this blessing could quickly turn into a burden, if not engaged properly. Discuss.

(10 Marks)

Ans: Demographic Dividend refers to a stage of Population dynamics, when the number of people of working age far outnumber the dependents (elderly and children). India is witnessing this regime with a median age of its population being 25, while other countries like Japan nearing 30's.

This Demographic Dividend can be of utmost benefit as India can provide labour to countries whose population has grown old. Acc. to ILO report, there would be 58% shortage of labour by 2050 in developed countries. India can very well fill this gap.

good

However, this can very well turn into a burden if not taken care of properly, viz:-

(a) With literacy rate around 74% (Census 2011), the rest of the population is deemed to go for unskilled manual jobs.

(b) Lack of vocational education among masses will result into huge unemployment rate forcing the population to engage in minimal activities.

good

Remarks

(c) A huge population, constrained on a small ~~pop~~ resource base, living in shoddy dwelling and insanitary conditions would be unhealthy and may call epidemics.

(d) Social Security schemes should be made available to youngsters so that the dividend when grows old can survive in a dignified way.

(e) Deviance may become a common feature, if, the population isn't engaged in meaningful activities.

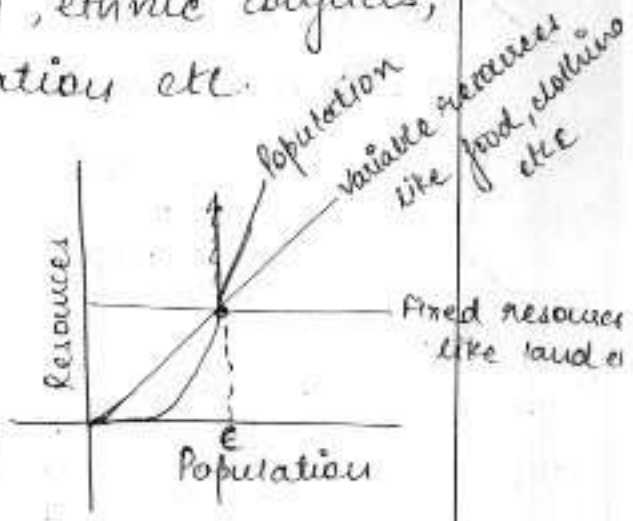
4 Thus, the huge demographic dividend can function as a double edged sword and providing skills through vocational training, healthcare and social security is what holds the key.

Remarks

Q3. Population-resources balance determines whether region is over populated or under-populated. Elucidate. (10 Marks)

Ans. Rise in population levels increases the pressure on available resources as "too many people, too few a resources". This results into uneasiness among population, ethnic conflicts, rising deviance among population etc.

Population-resource balance determines if the population has or has not surpassed the available resources be it fixed resources like land, water etc or variable ones like food, clothing shelter.



Point E represents equilibrium point where population is apt to survive on the available resources i.e. the resources are in equilibrium with the population.

Population less than E denotes - the dynamics of the population as being under populated and denotes that a huge resource basket is available for the population.

write specific examples of over populated and under populated regions.

Remarks

When the population crosses the mark  $E$  the resources become few and the population chases the resource to be able to survive.

3.5

Though, theoretically this may seem easy, but determining the exact quantum of resources available is a difficult task as land may differ in terms of productivity etc.

Remarks



Q4. Examine the role of digital technologies in transforming the rural India with suitable examples. (10 Marks)

Digital technology has created wonders for transforming rural India in multi-faceted sectors. Not only has it made life simpler for the rural folk, it has also led to socio-economic development due to flowing in of newer developmental ideas.

The various fields in which digital technology has transformed rural India include -

(a) Agriculture - A farmer in Aligarh, <sup>UP</sup> went for Pearl farming, owing the success to some YouTube videos. He now earns 10 lacs p.a while farming Pearl. } good

Portals like e-kisan, radio stations for farmers queries has made farmers aware of more options available to them in agriculture.

(b) Sanitation - Campaigns like Darwaza Band by Amitabh Bachchan, Ghar main Shuchh banaye by Neha Bala on Television now reach to millions of people who actively support it. } good

(c) Health - m-seva app reminds pregnant mothers about the nutrient dose they need to } good

Remarks

take and when, calls also sensitize would be fathers about the care mothers need during pregnancy.

(c) Banking - UPI transfer using basic phones, balance enquiry through SMS has made life easy for rural folks.

(e) Insurance - Transfer of money directly into bank accounts on crop failure has reduced the time once farmers spent in travelling & waiting in queues.

4) With Paytm app being installed in tea stalls, it is evident that digital technology has indeed transformed lives of the rural population.

Remarks

Q5. What do you understand by multi-level planning? Discuss its advantages and limitations in India's context.

(10 Marks)

Ans. Multi level planning seeks to take in the consideration of local areas into planning strategy. The lower level areal planning guides the higher levels of regional developmental agenda. This tries to solve the shortcomings of centralised planning which India had implemented most often.

It helps in guiding national goals based on local aspirations. It is an effective tool to take the demands of people to the national level debate.

Following are the advantages of MLP in India,

1. It helps in people's participation among the developmental agenda of their region.
2. Funds are thus utilised on what the people require as demands are made by the grass root level.
3. It helps in forging a feeling of unity with the mainstream leading to reduction in anti-national activities.
4. It indulges the people into mainstream, making them more inclined to participate in nation building.

Explain  
planning  
at  
different  
levels

good

Remarks

The disadvantages of MLP include -

- (a) It may be difficult to adjudge people's demand
- (b) Various groups might demand various provisions for development, incorporating them and channelising them would be challenging.
- (c) People may not always know what is right for them.
- (d) People may not be aware of international best practices suitable for that area.

Thus, India needs to carefully build its planning strategy, emphasising both on centralised and multilevel planning.

Remarks

## Section - B

Q6. What are the factors which determine the settlement patterns? Also, discuss the features of the various type of rural settlement in India. (12.5 Marks)

Ans Settlement Patterns reflect the ways in which dwellings are arranged. Initially, water resource used to be the main determinant for determining settlement, wherein people settled along the banks of rivers.

With pipes installed for carrying water, this settlement steadily expanded. With time, along with water availability factors like land availability, safety, security, transportation facility, connectivity to major areas also became relevant.

Various types of settlement patterns include-

(a) Clustered settlement - This usually occurs along plains, wherein people settle along a water body and this keeps on expanding to become a clustered settlement. Ex- settlement patterns in North Indian plains.

(b) Semi clustered settlement - This occurs when some sections of the society is forced to live in a separate cluster from the other. This usually occurs in

[cluster 3] [cluster 2]

Discuss specific factors that determine settlement pattern

Remarks

primordial identities where certain low class groups are made to settle in outer areas. Ex - In certain parts of Gujarat and Rajasthan.

(c) Linear settlement - This usually occurs along sea coasts with large dwelling units usually encompassing a big house with all amenities (farm etc) within its ambit. Ex - coastal regions.

Also discuss Hamlets

(d) Isolated settlement - This occurs on hilly & uninhabited areas which offer rugged topography, difficult terrain etc. Ex - In Uttarakhand, Assam etc.

Thus, geography plays an important part in determining the settlement patterns of an area.

Remarks

Q7. How do small scale industries and cottage industries work for the development of India?

(12.5 Marks)

Ans. Small scale industries are those that employ a comparatively lesser number of people in its ambit and work with lesser finances (< 20 lakh). Cottage industries are basically household based with people working within a house, using family as labour.

MSME employs 35 million people and make a contribution of around 30% to the GDP.

This highlights the contribution of this sector in the development of our nation.

The following reasons can be attributed to it-

(a) Women friendly - These employ around 37% of women folks (out of total working in MSMEs). Ex - sericulture can function very well with women working in part time job.

(b) Low fiscal requirements - These don't require much finances and hence are operable by even the poorer sections of the society.

(c) Source of livelihood - They provide source of income to the marginalised sections of the society.

They help in development of India by-

Explain  
small  
scale  
industries  
role

Remarks

- (a) Contribution to GDP - 30%
- (b) Employment generation - 35 million
- (c) low labour costs - attract foreign orders. Ex-  
goods made in households are taken by  
brands.

The govt has promoted schemes to help  
such industries -

(a) MUDRA loans - to provide finances to good  
the small manufacturers.

(b) Subsidy on electricity } Elaborate

(c) Bharatmala - to provide easy transportation } not  
required

Thus, small scale industries and ottage  
industries are drives of growth engine  
of our nation and help kickstart - the  
development story bottom-up.

Remarks



Q8. Critically examine Malthus theory of population growth and discuss its relevance in context of India. (12.5 Marks)

Ans. Malthus theory of population signifies that while population rises in Geometric progression, food resources tend to rise in Arithmetic progression, creating a gap in resource availability.

Malthus explains that this is bound to create food deficit in the population leading to starvation. Thus, he advises that population control needs to be done to ensure that all have food to survive aptly.

Its relevance has increased with passing time worldwide, especially for India - which has seen a huge population growth.

This further justifies the Population resource theory which justifies how over population creates a strain on the existing resources.

The recent starvation deaths in Delhi, Jharkhand, Bihar has added fuel to fire. Although, it also concerns the unapt PDS in those areas, but resource strain can't be ignored.

You need to critically examine the basic Postulate of Malthus theory of Population

Remarks

To ensure that the population gets its due share of resources, the following can be done -

(a) Chattisgarh model of PDS can be replicated.

(b) Water harvesting systems should be made compulsory in new buildings.

(c) Increase resources of R&D to ensure innovations made in pulses, millets etc.

(d) Housing should be made available at lower costs.

Thus, with increasing population Malthus theory has gained further relevance & to avoid starvation issues, the govt needs to rope in civil society & NGOs to further people's cause.

Remarks

Q9. Discuss the problems of agro-based industries in India. Do you think agro based industry could be a better option to absorb shift of labour force from agriculture. What steps has Indian government taken to promote these industries? (12.5 Marks)

Ans. Agro-based industries are those which rely on agro products as raw materials like cotton-textile, food processing industries etc. With the potential to absorb 15 million people directly and 35 million people indirectly, they have a huge potential.

Agro based industries haven't been able to kickstart in a big way because-

(a) Financial crunch - lack of finances play a huge role in failure of these industries to flourish. The govt has now initiated Mudra loans to ensure liquidity in this sector.

loans to MSME in 59 minutes will ensure smooth capital availability.

(b) Lack of forward & backward linkages - transportation - with bumpy roads and inaccessibility to deeper pockets, this was a major roadblock. Govt has initiated Bharat mala and Sagar mala Pariyojana to promote inter and inter country movements

Explain the problems of agro-based industries

Remarks

(ii) Lack of cold storage and special transport<sup>er</sup>.  
Refrigerators are required for carrying products with refrigeration requirements, but they are carried in trucks meant for grains leading to economic cost.

Govt is providing subsidised loans to ensure their availability.

(iii) Food Processing Industries haven't become that common. Govt has launched Sampada Yojana to ensure Mega Food Parks, complexes come into being.

Agro based industries have the potential to absorb shift of labour force from agriculture as it doesn't require much skill, can be operated with low finances, can easily connect with rural folks and thus has a huge potential of making development path of the nation.

Remarks

Q10. What are the locational factors responsible for the distribution of cement industry in India? Elaborate on its backward and forward linkages. (12.5 Marks)

Ans: Locational factors responsible for distribution of cement industry determine the place at which this industry needs to be setup.

Geographical factors -

(a) Raw material - limestone is a major raw material required & its access needs to be ensured. Also, flyash, ~~grit~~ silicates, etc can also be required as per the quality of cement being made (heat resistant, quick setting etc)

good

(b) Climate - water may play foul in cement making as air moisture may affect cement quality. But dehumidifiers can be installed.

Also discuss energy other issues like transported

(c) labour - labour supply needs to be ensured.

Non-geographical factors -

(a) Credit - banking facilities to provide easy loans for setting up the plant.

good

(b) govt. policies - if favourable would be advantageous for setting up the industry.

Remarks

(c) Others - favourable land tax, easy transport access are other factors which determine the optimal location of the industry.

There are seven cement agglomerates including - Santa, Bilaspur, Jamshedpur etc. Backward and forward linkages

*Elaborate Backward and forward linkages*  
include - presence of construction sites in surrounding areas, growing urbanisation, requirements, export ports/centres in the vicinity etc.

Cement industry is bound to be a market based industry as raw materials

are not weight losing and market is what holds the key.

Remarks

Q11. Even after having two third of its work force dependent on agriculture, north east is not self-sufficient in agriculture production. Discuss the role of management of water resources in this regard. (12.5 Marks)

Ans North Eastern terrain is rugged, with climatic variability on extremes and thus combining to form a mix of almost all factors, non-favourable to agricultural growth.

With lesser plain area, terrace farming is usually resorted to in north east. Also, tribal belts follow shifting agriculture (jhuming) to give land breathing space. This further reduces agri production.

Recurring floods in north east create havoc with people seen stranded in pools of water. Thus, this calls in for water management in North East -

- (a) Early Warning Systems - to gauge rise in river water level and warn people to resort to safety.
- (b) River linking systems - to transfer surplus water to deficit areas.
- (c) Coordination with CWC - on rising / not rising water levels in Brahmaputra and statistics allowed.

Explain flood and drought situation in north eastern region

Understand the question carefully

Remarks

On agricultural front, such varieties should be sown that can easily withstand longer durations of flooding like Mustard.

Enhanced focus on organic farming can also be stated as a major reason for low agricultural productivity.

R&D funds need to be enhanced to ensure better alternatives are available in terms of crop.

Thus, while some constraints are bound to remain, additional problems may be easily solved by taking cue from best practices across the world like bamboo drip irrigation etc.



Q12. Inland waterways of India are one of the most underutilized segments of transport sector. Examine. Identify the challenges in their development and discuss the taken by steps of government to overcome them. (12.5 Marks)

~~Inland waterways are the most potent means of transportation which as of now remain highly underutilized. With a huge potential, they still contribute to only 13% share in transportation.~~

First explain why it is most underutil

Challenges in development-

① Non-priority sector - These remained almost a non-priority sector until recently when govt announced 111 inland waterways across the nation.

② Lack of funds - To develop inland waterways dredging is required to ensure ships with larger drafts can come in. This requires funding.

The govt has initiated providing funds to such activities with work group on in Allahabad - Varanasi stretch.

③ Lack of container facilities - Inland waterways lack proper ports to store material during transit. This is a major roadblock in their

govt  
more  
ports a  
challenge

Remarks

development.

Govt has also increased their focus on this part, which until now largely remained untouched.

(4) lack of forward linkage - The transport from ports to inner block remains a challenge.

Bharatmala Pariyojana is a step in that direction connecting INP to Rewari via Vadodra, Surat etc and also Rewari to Kadi, Akhnoor, Varanasi & Sonagar.

4.5 There, though a little late measures are being taken to develop ports but these need to be fast forwarded to ensure efficiency is maintained.

Remarks

Q13. Sustainability of India's forest cover lies in adoption of social forestry, examine. Also, discuss what factors are hampering the growth of social forestry in India?

(12.5 Marks)

Due to growing population, the pressure on land is bound to increase, leading to increased deforestation demands for agriculture and dwelling requirements. The solution to this lies in adopting social forestry. Social forestry involves growing of forests/trees along the farm or in a community owned area, for everyone to use. It includes the following mechanisms -

(a) Agro-forestry - In this farmers can align their farms with trees (either to demarcate boundaries or on spare area of the farm).

For this, the govt gives subsidised seeds of beneficial trees which prevent soil erosion and add to nutritive value of soil by shedding leaves.

(b) Community owned forests - In this, the whole community can grow forest on common areas like outside temples etc (as sacred groves). In this the whole community acts as caretaker of trees as well as a

Explain the potential of social forestry

This is not needed

Remarks

beneficiary of the produce

But, various problems arise out of this which hampers the growth of social forestry -

*less relevant*  
 (a) Problem for crops - shade from trees prevent the growth of crops underneath it, making the whole exercise futile.

*Goal*  
 (b) Lack of awareness - Govt needs to promote this scheme on large scale to ensure that farmers are well aware of subsidised seeds being provided.

*Disadvantages*  
 (c) Lack of incentive - Farmers don't find a direct financial incentive out of this scheme & are hence hesitant to act.

*Advantage*  
 1. Advance policies

The govt needs to promote this scheme with full vigour to ensure that farmers actively take part in this alongwith some steps like  
 telling on radio the benefits of such.

Remarks

Q14. India needs to start addressing issues concerning its growing elderly population. Discuss. Also, discuss the steps taken by the government to tackle these issues. (12.5 Marks)

~~Due to the Demographic Dividend which India is experiencing is bound to grow old. With Southern India already facing ageing population, Northern India is bound to follow suit.~~

Context of question is missing

A need thus arises for India to start addressing issues related to elderly population like Health, social security, access to institutions, easy pensions, digital literacy etc.

This would ensure a dignified life for those who gave their youth to the nation. The elderly can very well be employed as overlookers of various public assets - like parks etc to engage them into activity.

The various steps taken by government to tackle these issues include -

(a) Vayashree Yojana - to ensure that money doesn't restrict the elderly and they get their pensions & services on time.

good

(b) Atal Bina Yojana - is a step in the right

Remarks

direction to ensure that people invest in their youth to be secured in their old age

(c) Maintenance & Welfare of Parents Act, 2007 and the recent amendment has included son & daughter in laws under def<sup>n</sup> of children and made it obligatory on them to take care of their parents. good

(d) Time Savings - Recent discussions for adoption of Singapore based model of youngsters working for elderly and gaining hours in their accounts to be able to receive those many hours in their old age

Thus, govt is in the right direction to provide elderly with all that it can from physical security to mental peace.

Remarks

Q15. What do you understand by energy security? How India should develop its energy mix to assure sustainable energy access to its people? Also, discuss the steps taken by government in this direction. (12.5 Marks)

All Energy Security as defined by International Energy agency refers to "the uninterrupted availability of energy sources at an affordable price". It ensures that energy resources are available for a nation to thrive upon.

Considering both environment and economy India needs to carefully forge its energy strategy to ensure energy security for both the present and the future generations.

While India is on the right path of developing 175GW renewable energy supplies by 2022 and of ensuring 40% renewable energy target by 2030, a lot else also needs to be done.

Solar power offers a very good scope with govt initiating Solar Charkha Mission (MSME), off-grid solar connections to farmers with surplus connected to grid, subsidised solar equipments, enhanced funding through ISA (International Solar Alliance). Floating solar farms (as in China) can also be emulated.

Dependence on coal needs to decline and hydropower can well take its place.

Remarks

Acts like Roshni Act of J&K for funds for hydropower can be emulated with transparency and accounts.

Tidal energy can be resorted to and govt can provide incentives for it. Dependence on crude needs to be reduced with implementation

of govt's E20 policy - mix of 20% bioethanol in diesel. Strategic oil reserves can also be established.

To sustainably remain on path of energy security, India needs to reduce its dependence on non-renewables and delve deeper into renewable energy.

Remarks



## Section - C

Q16. Does religion plays a significant role in the growth of the population in India? Explain with examples. Also, discuss the spatial variation in the population growth of India.

Ans. More than Religion, it is the socio-economic development that plays a major part in determining fertility levels. Socio-economic development are also linked to health, education etc which play a detrimental role. (15 Marks)

From 1951 to 2011, while population of Hindus decreased from 84.9% to 79.8%, Muslim population growth increased from 9.9% to 14.23%, while Sikh pop<sup>n</sup> reduced from 1.9% to 1.71%, Jains & Christians didn't significantly change at 0.4% and 2.3% respectively.

This has to be looked in context of education levels as well as higher education specially among womenfolk leads to lower fertility rates.

Religious beliefs may play a belief in fertility levels in terms of orthodoxy, but other factors overshadow it like education, health facilities, economic status etc.

Also explain U.P and Kerala Population dynamics

Remarks -

Though, Muslim population is increasing at a faster rate than Hindu population, but theories suggest that their rate of growths are fast converging owing to the socio economic status of the nation.

really good  
Muslim pop<sup>n</sup> in UP increased 25% while in Kerala increased 12.83% between 2001 and 2011, showing that not religion, but literacy rates (Kerala - 98%) is what might be one among the determining factors of TFR fertility rates.

Spatial Pop<sup>n</sup> Growth -

Explain regional population growth  
While Bihar is seeing a Total Fertility Rate of 3.2, in Kerala it has become 2.1 i.e. at replacement levels. This shows that better health, education makes women more empowered and detrimental about their sexualities.

Remarks

Religion can't be thus said to manage fertility rates but socio-economic development, awareness of sexual concerns among women etc are what determines the population growth.

SS

Add more points  
on spatial variation

Remarks

Q17. In the post-independence period, Indian cities had remained auxiliary to the concerns of balanced regional development. In this regard, discuss the need for inclusion of city issues and town planning in regional planning and development. (15 Marks)

*Remarks*

Remarks

Remarks

Q18. Integrating ecology and technology is the way forward towards an evergreen revolution. In the context, of above statement discuss the need of sustainable agriculture in India.

Ans Green Revolution solved the food problem (15 Marks) of the country but backfired in a variety of ways like lack of inclusive growth, uneven development, deteriorating soil fertility, eutrophication in water bodies etc. good

This calls in for an integral mix of ecology and technology to ensure that technology doesn't backfire. While mustard cultivation solved the woes of MP farmers, this led to increased GW use leading to increased arsenic concentration.

Sustainable agriculture is hence the demand of the day to ensure that farmers don't lose out on their prized possession - soil fertility, rendering the land useless. good

Technology gave us HYVs, but the companies inserted inhibitor genes, to ensure that they have a one time use & farmers are forced to buy seeds in next season.  
For this govt can provide subsidised

Remarks

loans for seeds to ensure higher seed replacement ratio.

Subsidised borewells & free electricity led to indiscriminate use of water by farmers leading to ~~them flooding their fields~~. This can be constrained by giving apt training on water use & a direct cutoff switch to ensure 4h is not pumped for more than a hour.

Fertilizers especially ammonia has been indiscriminately used taking N:P:K to 6:7:4.2:1.1 (4:2:1 being the normal required ratio). Drip irrigat<sup>n</sup> can be used to ensure fertigation which will simultaneously inhibit growth of weeds in the farm.

solar farms can be encouraged to ensure supply to farmers as well as its grid connection for passing on the surplus.

Your main focus should be on that they have a need of sustainable Agriculture.

link it with sustainable agriculture

Remarks



Geo-mapping of areas with soil health cards will ensure agrodimitation of agri crops leading to farmers growing only those crops which are fit for the concerned soil. (S)

Rainfall patterns can be gauged to ensure that crops are sown as per water availability.

Thus, sustainable agriculture using apt amount of ecology & technology is a key to evergreen revolution.

Q19. Delhi's deep smog has become a regular phenomenon. What are the geographic reasons behind this anomaly? Also, suggest some innovative solutions. According to you, what constitutes the definition of sustainable development of city? (15 Marks)

Ans: Delhi's smog has become a regular phenomenon and causes huge toll on elderly & children.

Following are the geographical factors responsible for it -

- ① Temperature inversion - vents that pollute remain near earth surface and don't fly away.
- ② Stalk burning of by farmers of Punjab, Haryana - leads to rise in particulate matter.
- ③ Geog Expanse - Being surrounded by land on all sides, pollutants don't find an escape route.
- ④ Storms from Arabia - Increase the particulate matter.

Solutions to this problem -

- ① sprinkling of water / Artificial rain to settle down the particulate matter.

Remarks

- ② Vertical gardens to ensure more plants per area.
- ③ Air purifier Tower like those installed in China.
- ④ Vacuum cleaning of roads to reduce dust.
- ⑤ Ban on construction activities } How it is possible
- ⑥ Wind Blowers to ensure wind circulation takes place.
- ⑦ Happy seedee machines to cut rice stalks.
- ⑧ Monetary incentive to farmers to not cut trees.
- ⑨ Generating awareness among locals.
- ⑩ Planting air purifying crops.

Sustainable development rests on Gandhi ji's talisman that "There is enough for everyone's need but not for everyone's greed."

Remarks

Sustainable development involves using that amount of resources that next generations can easily thrive on the remaining lot.

5) In cities - developed expansion holds the key with green areas, parking areas, open grounds all carefully planned to ensure easy and good living experience for its people.

Remarks

Q20. Food processing industry is said to be the key to transform India's food economy and realize the vision of doubling of farmers' income by 2022. Discuss the potential and challenges of food processing industry. Also, mention the steps taken by government to promote this sector. (15 Marks)

Ans. Food processing industries are those industries which utilize some agro product as its raw material. These may range from jams, chips etc. They are a key to realize the vision of doubling farmers income by 2022.

FPI's employ 15 mn people & have the potential to indirectly engage 35mn indirectly. It brings in 300 bn dollars of foreign investment.

### Challenges -

- ① lack of forward & backward linkage
- ② lack of transportation
- ③ lack of cold storage units etc
- ④ lack of export facilities.
- ⑤ storage facilities not apt
- ⑥ financial crunch

first explain the potential of food processing

Elaborate these points

2/3

incomplete

Remarks

Remarks

Remarks

