



# VISION IAS

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## GENERAL STUDIES (TEST CODE : 1413)

Name of Candidate	Akash Shrivastava		
Medium Eng./Hindi	English		
Center		Registration Number	667073
		Date	13/12/2020

### INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
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8	10	
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16	15	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

### INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).  
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI** इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**  
सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.  
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. Answers must be written in the medium authorized in the Admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other than the authorized one.  
प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.  
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.  
उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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# EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

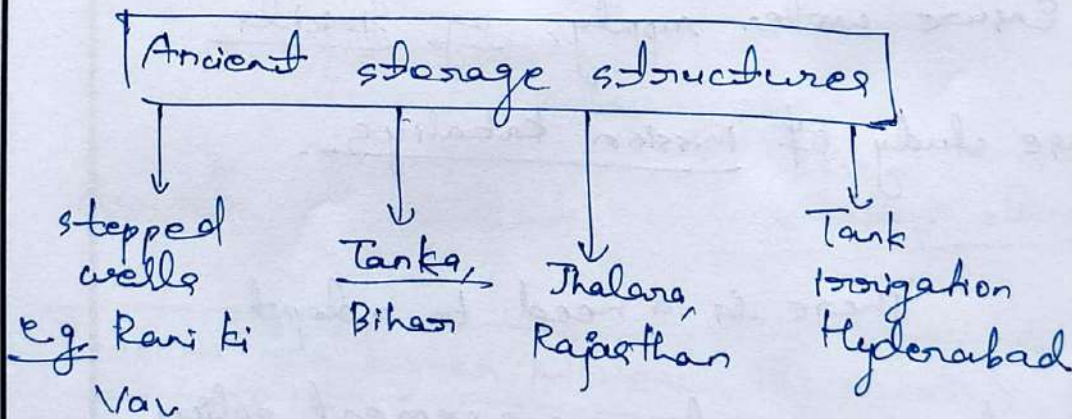
1. In India, ancient and medieval storage structures such as the step wells, are not only magnificent in their conception, architecture and ornamentation but also hold a lesson for contemporary water concerns. Discuss with examples.

(150 words) 10

भारत में बावड़ियों जैसी प्राचीन और मध्यकालीन जल भंडारण संरचनाएं न केवल अपनी अवधारणा, वास्तुकला और अलंकरण में भव्य हैं, बल्कि जल संबंधी वर्तमान चिंताओं हेतु एक सीख भी उपलब्ध कराती हैं। उदाहरणों सहित विवेचना कीजिए।

According to NITI Aayog report

nearly 600 mn Indians suffering from  
severe water crisis. The traditional  
storage structures holds potential  
to change the fortunes.



These traditional structure can  
solve contemporary water crisis as —

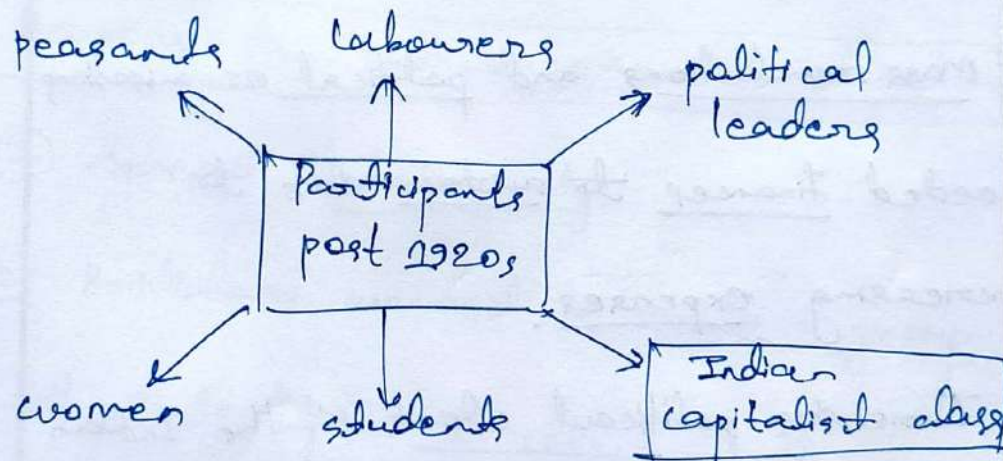
- ① Serve as rain water harvesting mechanism, eg. Thalass
- ② Maintain groundwater or aquifer level.
- ③ To supply water during lean period
- ④ As barrier to increasing drought like conditions eg → pond system in Ratanpur, Chhattisgarh
- ⑤ Ensure water supply, eg Stricids case study of Mission Kalyan.

There is a need to adopt comprehensive water management policy utilizing traditional knowledge.

2. In the period after 1919-20, the influence of Indian capitalist class over the nationalist movement progressively increased due to various reasons. Discuss. (150 words) 10

1919-20 के पश्चात् की अवधि में, विभिन्न कारणों से राष्ट्रवादी आंदोलन पर भारतीय पूंजीवादी वर्ग का प्रभाव उत्तरोत्तर बढ़ा। चर्चा कीजिए।

The period after the end of World War-I in late 1910s saw a watershed moment in India's struggle for independence.



Reasons for higher influence of capitalists

- ① During World War-I, Indian capitalists earned profits by supplying European orders.

- ② The swadeshi agenda of Non-cooperation movement saw a shift towards locally made products.
- ③ Capitalists like G.D. Birla and Jammalal Bajaj showcased their nationalistic agenda and contributed towards struggle.
- ④ Mass organisations and political organisations needed finances to sustain due to increasing expenses.
- ⑤ Increasing political clout of the Indian capitalist class.

The support from capitalist class provided nuch needed thrust financially to freedom struggle.

3. With modern education being introduced in India to meet the interests of the British, its reach was restricted and its character unsatisfactory.  
Discuss. (150 words) 10

ब्रिटिश हितों को पूरा करने के लिए भारत में आरंभ की गयी आधुनिक शिक्षा की पहुंच सीमित थी और इसका चरित्र भी असंतोषजनक था। चर्चा कीजिए।

The British colonial masters introduced modern scientific education in India. Extending modern education by Britishers had its own reasons.

Reasons to introduce modern education

- ① Spread of rationality
- ② Britishers wanted to create a group of people Indian in colour, but western in thoughts and ideas!
- ③ To create an army of cheap officers and clerks for British offices.

④ Spread of Christianity by Christian missionaries.

The Charter Act of 1813 thus provided for Rs 1 lakh/year for spread of education. However, it was restricted in character as -

- ① Accessible to few urban elites.
- ② It created divide between groups of vernacular and modern-english educated students.
- ③ Women had lower access to modern education.
- ④ Earlier spread of modern education was aimed at cost of vernacular education.

The British led modern education helped creating rational minds to lead Indian struggle.

4. Throw light on the reasons of poverty in the third world countries and enumerate the key ideas suggested in the Brandt report of 1980 to help them.

(150 words) 10

तृतीय विश्व के देशों में निर्धनता के कारणों पर प्रकाश डालिए और उनकी सहायता करने के लिए वर्ष 1980 की ब्रांट (Brandt) रिपोर्ट में अनुशंसित प्रमुख विचारों को सूचीबद्ध कीजिए।

The third world countries denote the group of backward countries that are left behind in the economic growth of the world.

### Reasons of poverty in 3rd world countries

- ① Historical exploitation by imperialistic endeavours of first world countries
- ② Low capital goods industries  
e.g. Sudan, Somalia
- ③ Lower capacity to invest
- ④ Smaller size of economy, e.g. small island nations.

⑤ low human development → education,  
health and skill exists.

⑥ High disease burden

The grim situation of poverty  
in these countries led to formation  
of Commission, which gave its report called  
Brandt Report, 1980. It suggested —

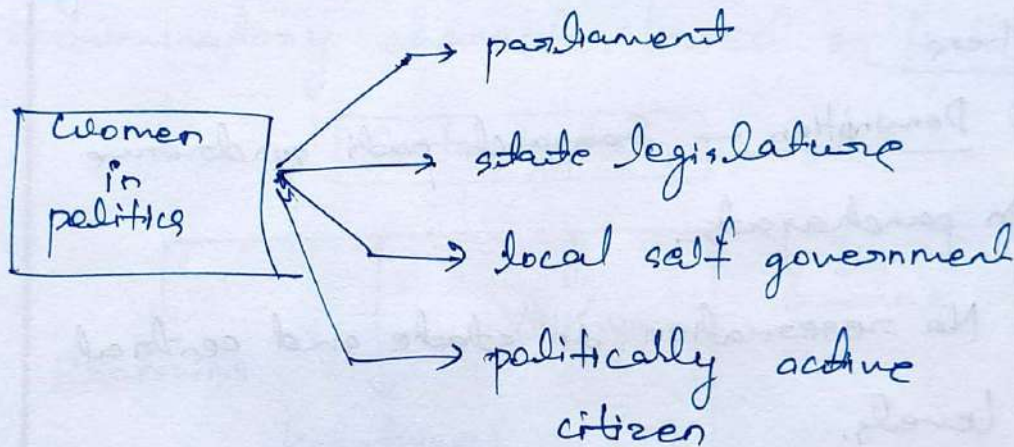
- ① Integration of these countries with  
larger global markets.
- ② Preferential treatment in trade
- ③ International cooperation and assistance  
in human capital development.
- ④ Provide support to address disease  
burden
- ⑤ Generate employment.

Brandt Report, 1980 paved way for  
global order in favour of ~~and~~ world countries

5. Give an account of various factors that have led to poor participation of women in Indian politics. (150 words) 10

भारतीय राजनीति में महिलाओं की निम्न भागीदारी हेतु उत्तरदायी विभिन्न कारकों का विवरण दीजिए।

The 17th Lok Sabha constituted  
in 2019 had 14% of women legislators.  
The Rajya Sabha have 12% women presently



Factors leading to poor participation

Social factors

- ① Patriarchal society does not accept women in politics
- ② Cultural conditioning of women

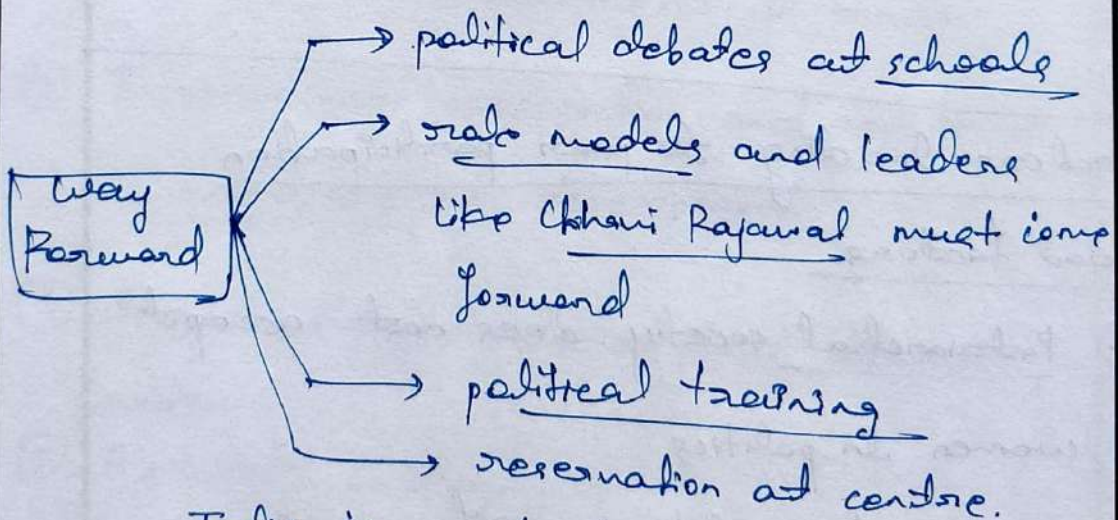
- ③ Women imposed with sexual division of labours at home.

### Economic

- ④ low economic participation and lower wages decrease their financial independence and hence decision making others

- ⑤ Domination → Sasipanch pati syndrome in panchayats.

- ⑥ No reservation in state and central levels.



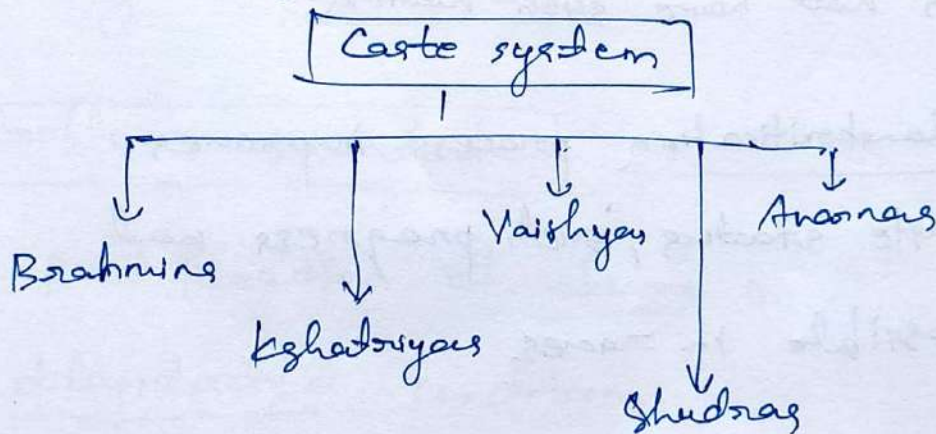
India is ranked 18/153 in Global Gender Gap Report in political participation

6. Though both caste and race are manifestations of closed systems of stratification, there are important differences between the two. Explain.

(150 words) 10

यद्यपि, जाति और प्रजाति (race) दोनों ही स्तरीकरण की बंद व्यवस्था की अभिव्यक्तियां हैं, तथापि इन दोनों के मध्य महत्वपूर्ण अंतर भी हैं। स्पष्ट कीजिए।

The notion of caste is based on ancient 'Varna system'. With the passage of time caste attained discriminatory character based on birth.



Race on the other hand emerged as biological explanation of differences. However, due to excess intermingling of people, it has lost its relevance in present day.

## Major differences between caste and race

- 1) Caste is cultural nation, race is biological.
- 2) caste system is based on division of labour in society whereas race does not have such nation.
- 3) Sanskritisation process improves caste status; such progress not possible in races.

Race today has attained negative nation, and so is caste due to their discriminatory characters.

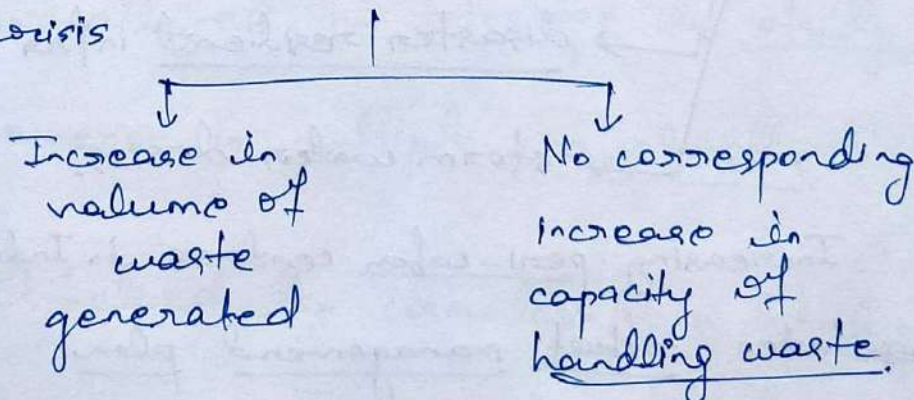
7. What are peri-urban areas? Highlight the problems of peri-urban areas in India and also suggest corrective measures. (150 words) 10

परिनगरीय (peri-urban) क्षेत्र क्या हैं? भारत में परिनगरीय क्षेत्रों की समस्याओं पर प्रकाश डालिए और साथ ही सुधारात्मक उपायों का भी सुझाव दीजिए।

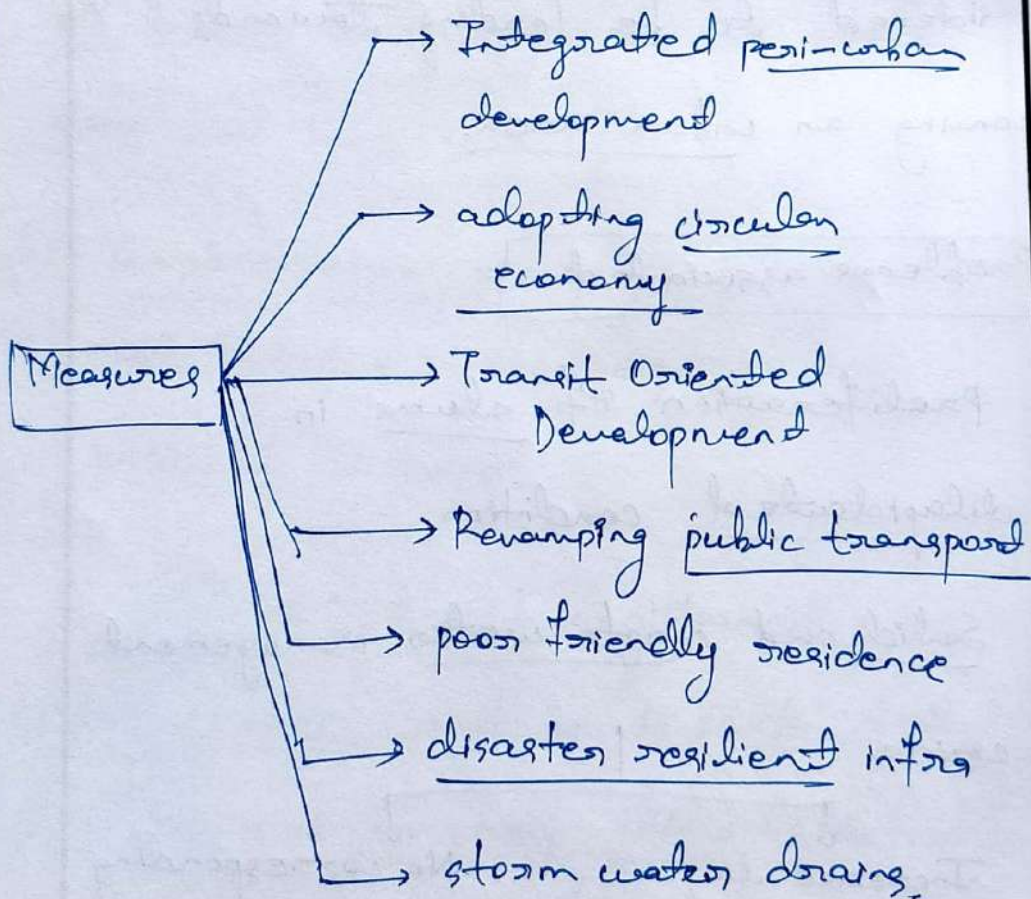
Peri-urban areas can be understood as outcome of the process of urbanisation. Such areas are considered to be leading towards becoming an urban area.

### Problems associated

- ① Proliferation of slums in dilapidated condition.
- ② Solid and waste-water management crisis



- ③ High Income Inequality
- ④ Higher crime rate
- ⑤ Safety concerns related to women and other vulnerable sections
- ⑥ Law and order problems increases.



Increasing peri-urban centres in India necessitates robust management plan

8. Studying the cosmos for over a quarter century, the Hubble Space Telescope has changed our fundamental understanding of the universe.  
Elaborate. (150 words) 10

एक चौथाई सदी से अधिक समय तक ब्रह्मांड का अध्ययन करते हुए, हबल स्पेस टेलीस्कोप ने ब्रह्मांड के संबंध में हमारी मौलिक समझ को बदल दिया है। सविस्तार वर्णन कीजिए।

### The Hubble Space Telescope's

installation about quarter century ago,  
is seen as watershed moment in  
cosmology.

Significance of project and changes it  
has brought. →

- ① The Hubble Telescope was much  
more powerful than any of its  
predecessors, it had wider bandwidth  
that allowed the telescope to study  
universe in multiple wavelengths.
- ② It helped the cosmologists in detecting

distant stars and understand the  
formation theory,

③ Hubble space telescope confirmed  
the hypothesis of formation of  
nebula in space-time period

④ It established the expanding  
nature of universe, thus providing  
some evidence to singularity  
hypothesis.

⑤ The large drawn cosmological data  
collected via telescope is still  
providing necessary inputs to cosmologists

The telescope has thus evidently  
changed the fundamentals of our understanding  
of universe.

9. Give an account of the location of pharmaceutical industry in India. Also, give reasons as to why India has emerged as the pharmacy of the world.

(150 words) 10

भारत में औषध उद्योग की अवस्थिति का विवरण दीजिए। साथ ही, इसका कारण भी बताइए कि भारत विश्व की औषधशाला (फार्मेसी) के रूप में क्यों उभरा है।

In light of ongoing COVID-19

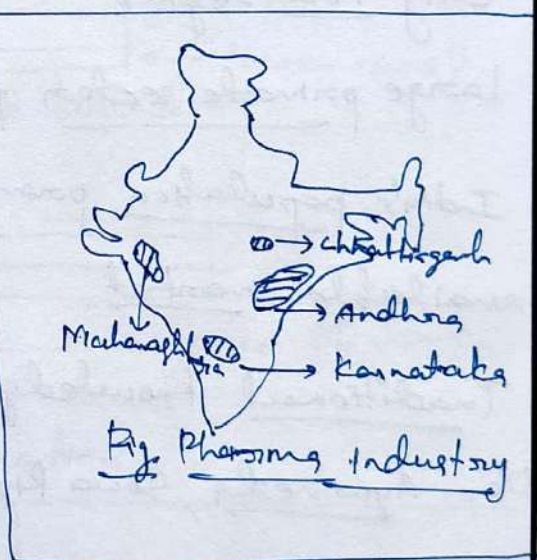
pandemic India has once → again showcased

its  prowess  in pharmaceuticals by

supplying HCG medicine to over 122

countries.

Pharmaceutical  
industry is spread  
throughout the  
country. It has  
large presence in  
states of Andhra  
Pradesh and Maharashtra.



India has today emerged as pharmacy of the world due to reasons as —

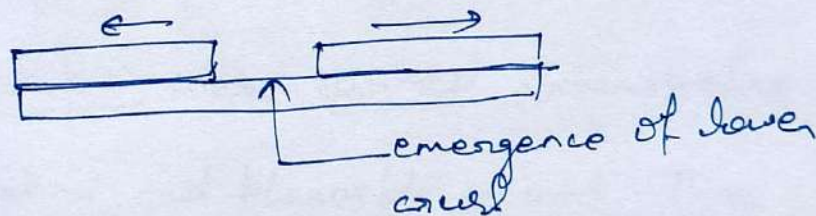
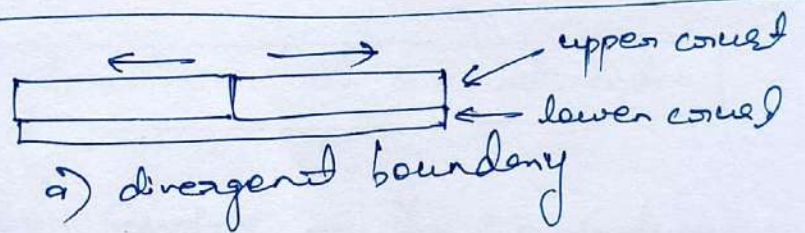
- ① Large capacity to produce vaccines  
eg Serum Institute of India has largest capacity
- ② Easy visionary researchers like (P.C. Ray)
- ③ Active government support.
- ④ Easy FDI regime
- ⑤ Large private sector participation
- ⑥ India's population provides readily available market.
- ⑦ Traditional knowledge of medicine  
like Ayurveda, Sowa Rigpa etc

The world today finds India as dependable pharmacy with India's capacity in the industry especially generic medicines

10. Giving example, explain how continental rapture ultimately results in the formation of a new ocean basin. (150 words) 10

उदाहरण देते हुए, स्पष्ट कीजिए कि किस प्रकार महाद्वीपीय विदारण के परिणामस्वरूप अंततः नवीन महासागरीय बेसिन का निर्माण होता है।

Continental rapture refers to gradual deterioration of the continental surface due to variety of reasons such as denudation, plate movements etc.



As shown in above example, due to divergent plate boundary, the lower crust emerge. Such process leads

to formation of rift valley. Prolonged  
rupture widens the rift and results  
in formation of new ocean basins.

The Great African rift valley  
can be seen in this light. Although  
it is at early stage of formation.

11. A strong tradition of linguistic analysis developed in ancient India and there remained a continuous focus on its preservation and transmission. Elucidate. (250 words) 15

प्राचीन भारत में भाषा संबंधी विश्लेषण की एक सुदृढ़ परंपरा विकसित हुई थी और इसके संरक्षण एवं संचरण पर निरंतर ध्यान दिया जाता रहा था। स्पष्ट कीजिए।

Language has been long revered in India. Today India has 22 scheduled language and nearly 1400 dialects, depicting huge linguistic diversity of India.

Linguistic tradition of ancient India

- ① Mausya Empire → The inscriptions of Ashoka were carved extensively in Brahmi and Kharoshthi script. They were also carved in Persian and Greek languages.
- ② Early Buddhist texts like Tripitaka and Buddhacharita were written in Pali language.

- ③ Jain texts like Bhagvati Sutra and Chedab sutra were written in Prakrit and Sanskrit.
- ④ Sanskrit proliferated during Gupta period and Pushyabuti dynasty.
- ⑤ In South India, Sangam era is seen as such period. The Sangam assemblies gave birth to literature like Tolkappiyam & Silapadikaram and Maimeghalai in Tamil language.
- ⑥ Vijaynagara's Krishna deva Raya's provided patronage to Tamil, Telugu, Kannada and Sanskrit.

This tradition of linguistic analysis were preserved diligently by the

dynamics by various means as—

- ① Carving on rock e.g. Allahabad inscription,
- ② Assemblies were held periodically  
e.g. In 2nd Buddhist assembly, the three pitakas were combined to form tripitaka,
- ③ Oral tradition among Brahmins kept Sanskrit language and literature alive
- ④ Spread through 'gurukul system'

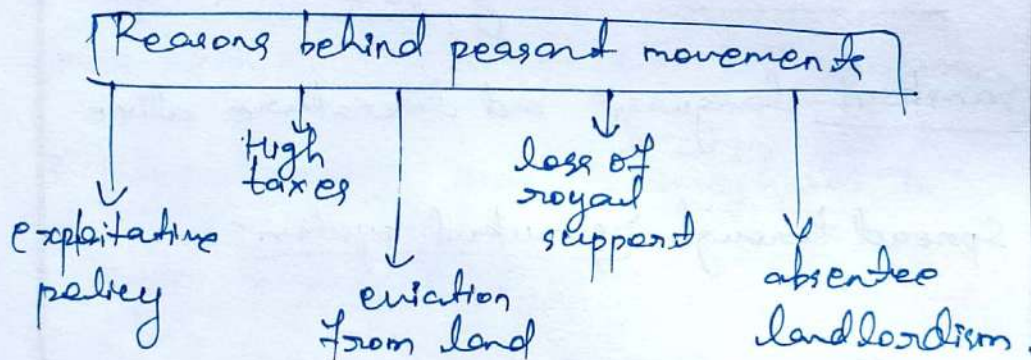
These preservation and transmission of such language and tradition were consciously taken in ancient India.

12. Explain, using examples, how the nature of peasant movements changed during the colonial period. (250 words) 15

उदाहरणों के साथ स्पष्ट कीजिए कि औपनिवेशिक काल के दौरान किसान आंदोलनों की प्रकृति किस प्रकार परिवर्तित हुई।

The peasants are those cultivators who practiced agriculture and dependent on it for their subsistence.

Colonial rule deteriorated peasant condition badly and led to movements.



### Peasant movements in colonial India

#### (A) Early movements

- ① They adopted accomodative instance
- ② The early movements aimed at

ameliorating their condition by reforming the colonial tax policies.

② Zamindari or Permanent Settlement by Cornwallis was one of the major reason that aroused peasants

④ The Deccan Revolt, 1875 can be seen in this light. The peasants attacked money lenders and burnt all records.

③ 20th century peasant movements

① The peasants were alienated from the British rule and believed in agential power of the Indian leaders

② They actively participated in national movements.

③ Champan Sadyagrah, <sup>1917</sup> against Tinkathia system of indigo cultivation, The peasants.

collected themselves under the leadership of Grandhiji.

④ Bardoli Satyagrah, 1928 under the leadership of Sardar Patel.

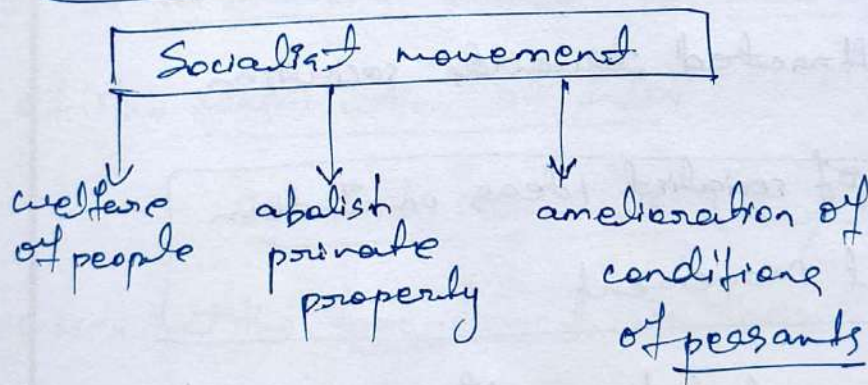
↳ Peasants adopted policy of social ostracization against anyone who supported Britishers.

The modalities of peasant movements changed after independence and attained non-state violent character in the form of regal movement.

13. What were the conditions and circumstances that led to the emergence of Socialist Movement in India? Analyse the impact of socialist ideas on the Indian National Movement. (250 words) 15

भारत में समाजवादी आंदोलन के उद्भव के लिए उत्तरदायी परिस्थितियां और घटनाक्रम क्या थे? भारतीय राष्ट्रीय आंदोलन पर समाजवादी विचारों के प्रभाव का विश्लेषण कीजिए।

The Indian Freedom struggle is characterised by variety of ideas. The emergence of socialist movement in India during late 1910s can be seen another element in plural ideologies of the freedom movement.



Conditions that led to socialist movements

- ① Success of the Bolshevik Revolution of 1917 in Russia

- ② Unprecedented growth of Russia that adopted socialistic pattern of growth
- ③ Experience of exploitative Capitalist system of Britishers attracted towards socialism.
- ④ Educated Indians were aware of Karl Marx's philosophy of socialism
- ⑤ Young minds of Pt Nehru and SC Bose were attracted towards socialism

### Impact of socialist ideas on Indian National Movement

- ① It provided the welfarist agenda to freedom struggle
- ② It guided as a road map towards independence

- (3) Planning, as done in Russia, was adopted in Fairplay session of Congress led by SC Bose
- (4) Bhagat Singh and Chandrashekhar Azad formed Hindustan Socialist Republican Association (HSRA)
- (5) Socialistic aim kept people at the forefront of all politics and strategies.
- (6) It ultimately shaped the ideology of the Constitution of India.

Socialist Movement brought the masses at the fore-front in their own struggle for freedom.

14. The Truman doctrine was part humanitarian and part strategic in its objectives and impact. Analyse. (250 words) 15

दूमैन सिद्धांत अपने उद्देश्यों और प्रभाव में आंशिक रूप से मानवीय और आंशिक रूप से रणनीतिक था। विश्लेषण कीजिए।

The Truman doctrine was adopted by America in the wake of cold war with USSR. The conflict was more earned between democratic and communism ideology.

Humanitarian aspect

- ① To protect the rights of the people
- ② The socialist and communist agenda amassed great difficulty for people.

There were class and ethnic cleansing as well. Truman doctrine aimed to assist them.

- ③ Provide basic needs for the public

Strategic aspect

- (1) Contain spread of Communism in the world.
- (2) Many eastern European countries already fell on the trap of the Communism.
- (3) Rising influence of USSR in geopolitical arena.
- (4) Strategically spread democracy among people.. generate democratic sentiments.

Truman doctrine thus essentially was a mix of humanitarian and strategic move by America.

15. Almost all the major 'divisive' problems of today have been there ever since Independence, or even earlier. But in spite of them India has not only survived as a nation but also become stronger. Discuss. (250 words) 15

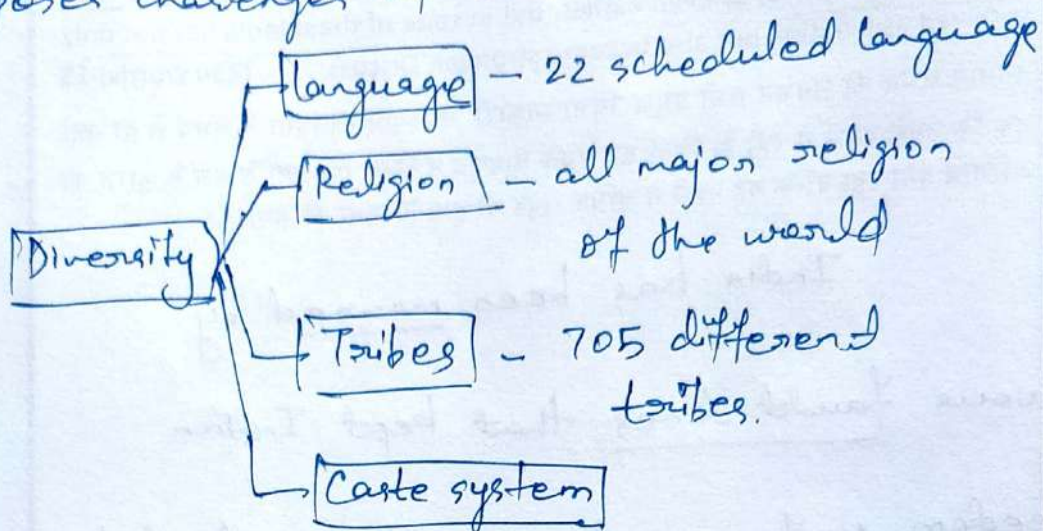
वर्तमान समय की लगभग सभी प्रमुख 'विभाजनकारी' समस्याएं स्वतंत्रता के समय से या यहां तक कि उससे पहले से रही हैं। किन्तु इन सबके बावजूद न केवल एक राष्ट्र के रूप में भारत का अस्तित्व बना रहा बल्कि यह पहले से अधिक सुदृढ़ भी हुआ है। चर्चा कीजिए।

India has been marred by various fault lines that kept Indian freedom, unity and sovereignty at stake. Despite the plethora of challenges, India as a nation managed to flourish.

Major divisive problems today -

- ① Religious animosity → The colonial policy of 'divide and rule' badly affected communal harmony in India specially between Hindus and Muslims after the partition.
- ② Multi-linguistic, multi-ethnic society

poses challenges of conflict



② Economic inequality

④ Regional disparity in development

Despite these numerous problems

India survived and proliferated in its ambitions. Some of the reasons could be -

① long tradition of co-habitation

② Indian culture assimilated plural beliefs eg. Aryans, Islam and Christianity

③ Cultural co-relation → It is accepted that a muslim in a region has

more in common with a Hindu in that  
region vis-a-vis other Muslim somewhere  
else.

(4) Preservation of ethnic identity based  
on language, region, caste etc

(5) Constitution of India provided for  
freedom for its citizens and adopted  
pluralistic morals

(6) Modern education with rationality  
along with traditional value of  
tolerance

(7) Jainism's Anekantavada' principle,

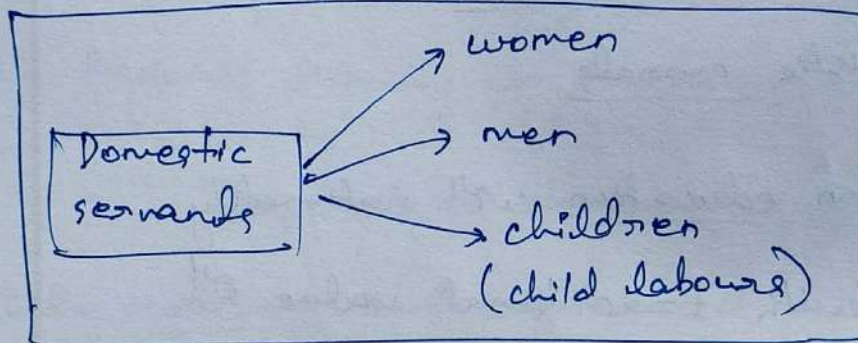
The perceived weakness of India

became its power in the process of  
growth.

16. Domestic servants are one unique group of workers in modern India, which is ubiquitous but remains invisible. Indicate the challenges faced by this section of workers. Also, discuss the factors that contribute to these challenges and suggest measures to address them. (250 words) 15

घरेलू नौकर आधुनिक भारत में श्रमिकों का एक अद्वितीय समूह है, जो सर्वव्यापी है किन्तु अदृश्य बना रहता है। श्रमिकों के इस वर्ग द्वारा सामना की जाने वाली चुनौतियों का उल्लेख कीजिए। साथ ही, इन चुनौतियों में योगदान देने वाले कारकों की विवेचना कीजिए और उन्हें दूर करने के उपाय भी सुझाइए।

Domestic servants in India remain largely invisible due to the informal nature of work.



Challenges faced by domestic workers

Economic challenges

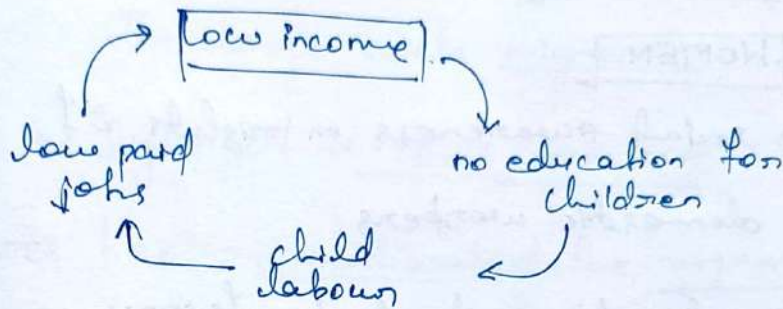
- ① Low wages
- ② No income security
- ③ High cost of living in cities

social

- ④ Low social status
- ⑤ Lack of capacity to educate children

② sexual harassment of women and child  
others

⑦ Poverty trap



⑧ low social security

⑨ Devold of many governmental  
programmes

Factors contributing to the challenges

① Informal nature of work

② low bargaining power

③ Neglected by government schemes

④ No exhaustive data <sup>on</sup> domestic workers

⑤ Poverty → inability to leave the  
existing job.

② Lack of alternate opportunities

### Way Forward

#### WOMEN

- social awareness on rights of domestic workers
- education about beneficiary programmes

#### CHILDREN

- imposition of prohibition of Child Labour Act
- Free education and lodging facility.

#### OVERALL

- formalisation of domestic work
- registration at district/city office
- provision for advance payment

The vulnerable section must be taken care of to ameliorate their condition

17. The story of contemporary India is a story of migration. In this context, explain how migration has shaped India socially and economically.

(250 words) 15

समकालीन भारत की कहानी वस्तुतः प्रवासन की एक कहानी है। इस संदर्भ में, स्पष्ट कीजिए कि प्रवासन ने किस प्रकार भारत को सामाजिक और आर्थिक रूप से आकार दिया है।

The large scale migrant crisis in light of COVID-19 lockdown measures has re-calibrated the migration issue in the Indian areas.

Contemporary India is shaped by migration.

According to Census 2011, there were 45.36 crore migrants in India.

Out of this nearly 8 crore migrants are from rural to urban.

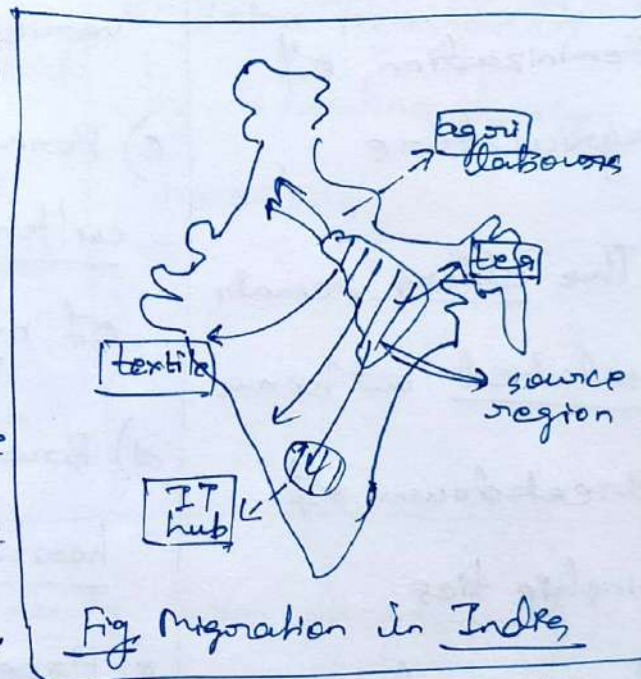
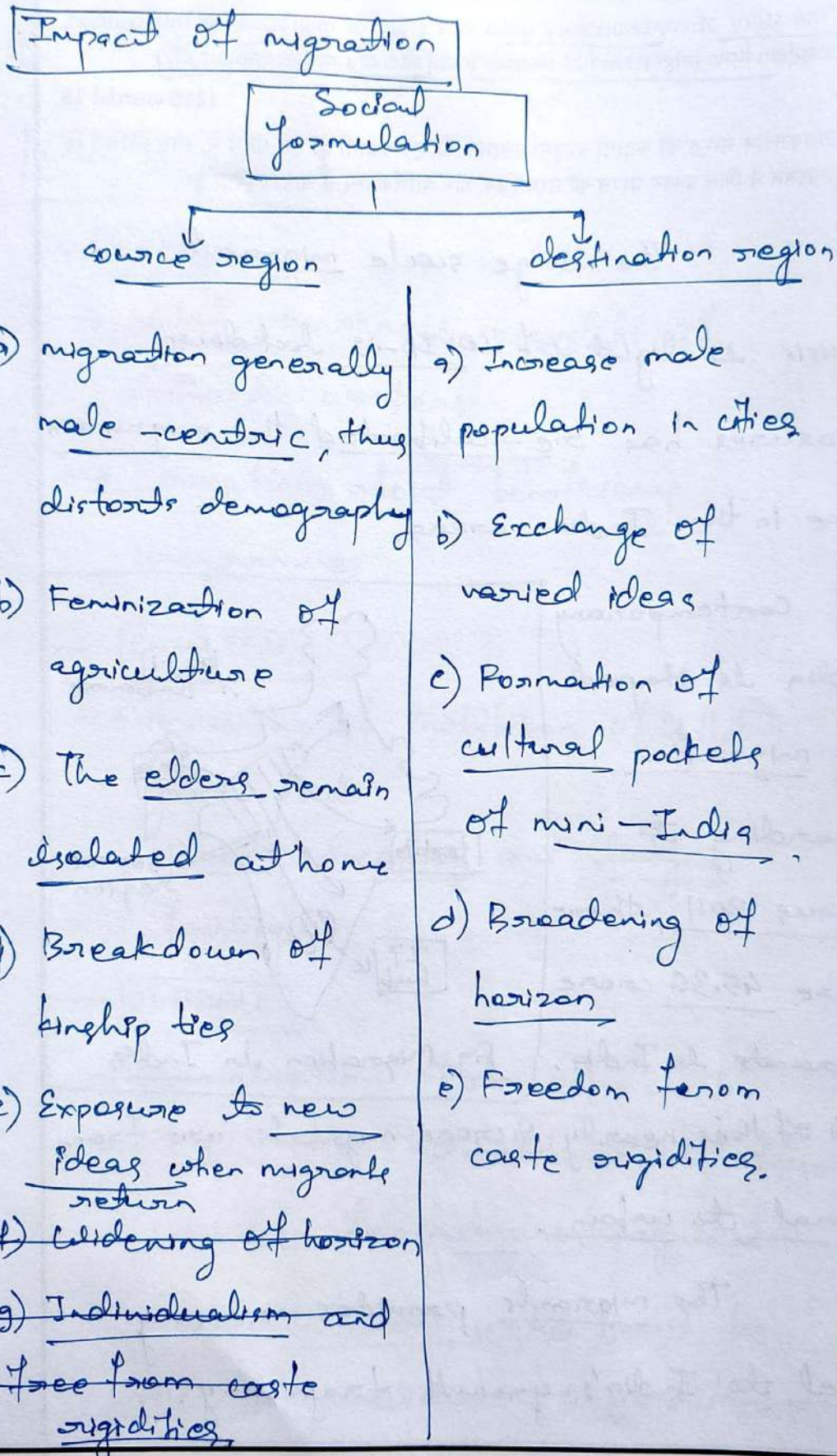
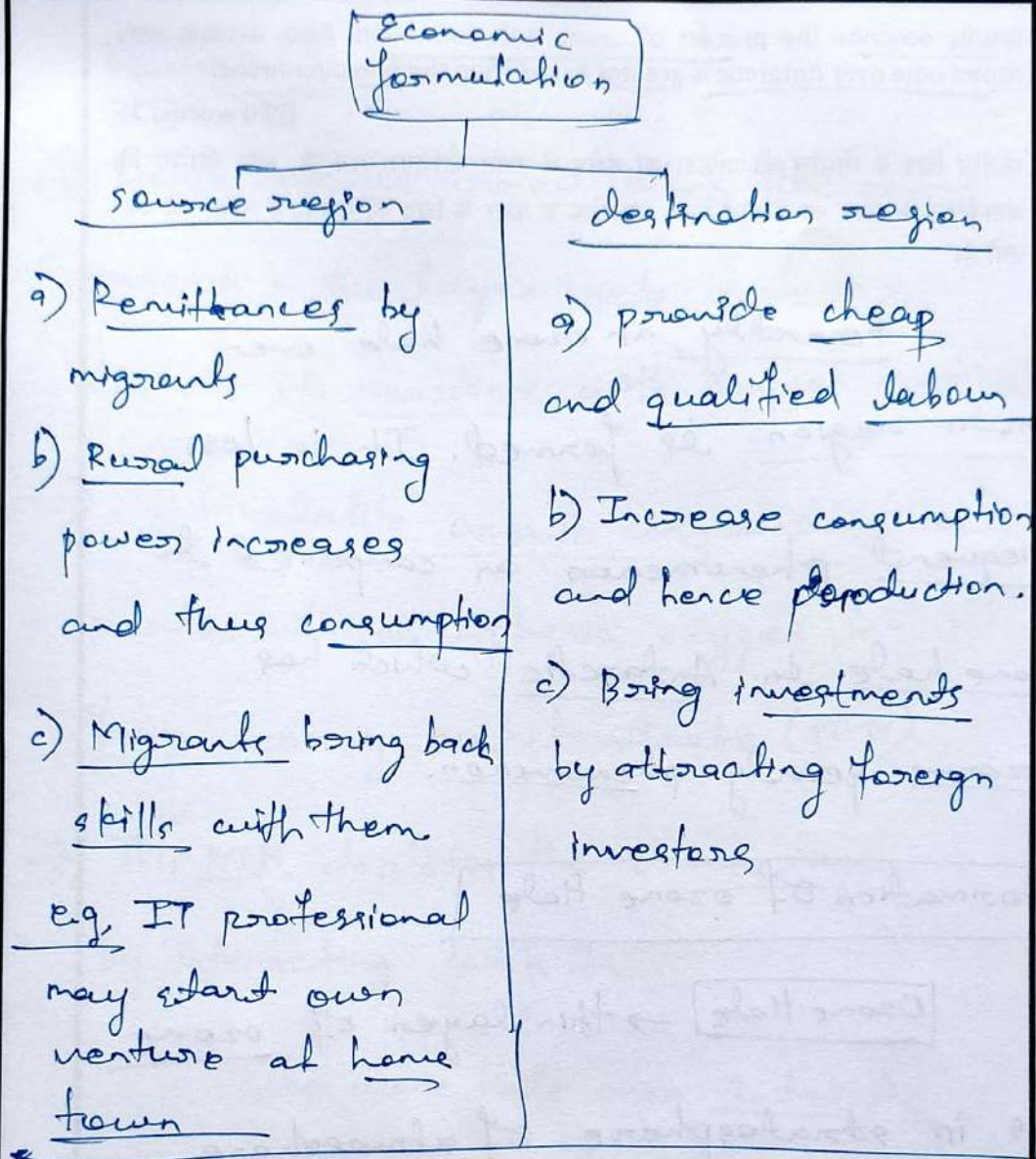


Fig Migration in India

The migrants provides necessary fuel to India's growth trajectory.





The migrants form large chunk of population and thus actively shape the socio-economic arena of country.

18. Briefly describe the process of ozone hole formation. Also, explain why ozone hole over Antarctic is greater in size than the one over Arctic.

(250 words) 15

ओजोन छिद्र के निर्माण की प्रक्रिया का संक्षेप में वर्णन कीजिए। साथ ही, स्पष्ट कीजिए कि अंटार्कटिक के ऊपर का ओजोन छिद्र, आर्कटिक के ऊपर के छिद्र की तुलना में आकार में बड़ा क्यों है।

Recently, an ozone hole over Arctic region is formed. It is less frequent phenomenon as compared to ozone hole in Antarctic which has become yearly phenomenon.

Formation of ozone hole

Ozone hole → thin layer of ozone gas in stratosphere of atmosphere.

The ozone layer holds importance due to its distinct ability to reflect back harmful ultra-violet rays from sun.

Formation

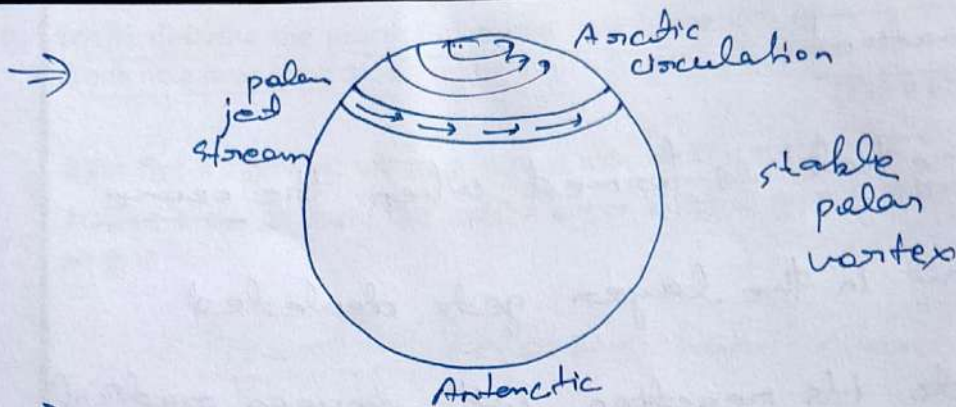
① Ozone hole is formed when the ozone present in the layer gets depleted due to its reaction with oxygen radical.

→ The volatile organic compounds (VOCs) reacts with atmospheric oxygen to form peroxy-acetyl nitrate (PAN)

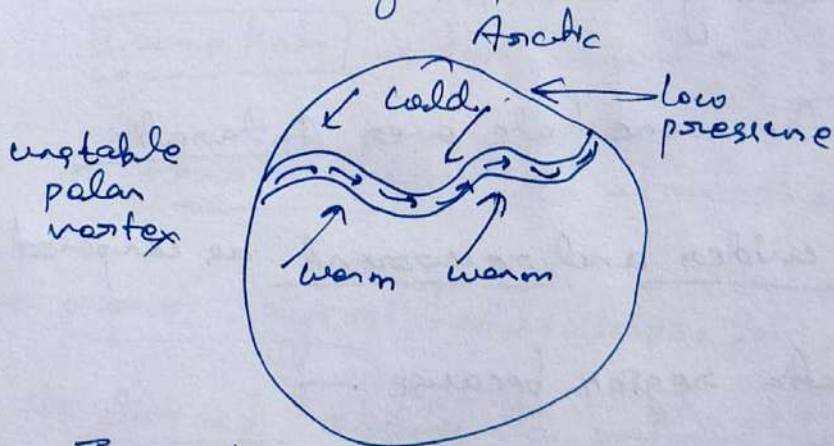
→ This PAN depletes the ozone layer by interacting with it.

The ozone hole over Antarctic region is wider and resistent as compared to Arctic region because —

→ The air is denser over Arctic due presence of land which is absent in Antarctic region.



⇒ The Arctic region has low pressure zone which is surrounded by polar jet stream. It prevents flow of wind away from poles and prevents depletion of zone. It sometimes emerge when a condition emerge as



In such a situation arctic ozone hole is formed

19. Ocean deoxygenation is one of the most detrimental, yet under-reported side-effects of human-induced climate change. Identify the causes behind it. Also, mention its socio-economic and environmental implications for the world.

(250 words) 15

महासागरीय डीऑक्सीजनेशन मानव प्रेरित जलवायु परिवर्तन के सर्वाधिक हानिकारक, तथापि अल्पसूचित दुष्प्रभावों में से एक है। इसके लिए उत्तरदायी कारणों की पहचान कीजिए। साथ ही, विश्व के लिए इसके सामाजिक-आर्थिक और पर्यावरणीय निहितार्थों का भी उल्लेख कीजिए।

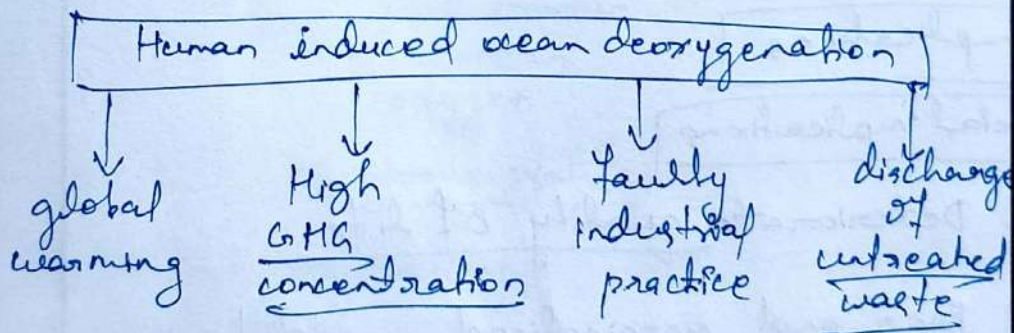
Ocean deoxygenation refers

to depletion in concentration of oxygen

in ocean water. Excessive absorption of

CO<sub>2</sub> (carbon-dioxide) by ocean is

prime cause of deoxygenation.



Causes behind ocean deoxygenation

- ① Eutrophication → increases overall oxygen demand in the ocean water
- ② Higher Green House Gas CO<sub>2</sub> concentration

since ocean serves as carbon  
sequestration, and in exchange releases  
oxygen

③ Higher temperature decrease dilution  
of oxygen in water.

④ Waste-water discharge, solid organic  
waste increases microbial activity and  
hence BOD (biological oxygen demand)

### Implications

#### Social implications

- ① Deteriorate quality of life
- ② Poor and marginalised would be  
worst affected

#### Economic implications

- ① Increase expenditure on environmental  
consequences,

- ② Affect phytoplanktons → decrease  
fish catch of farmers → affect  
coastal community

### Environmental Implications

- ① Decrease ocean capacity of carbon sequestration.

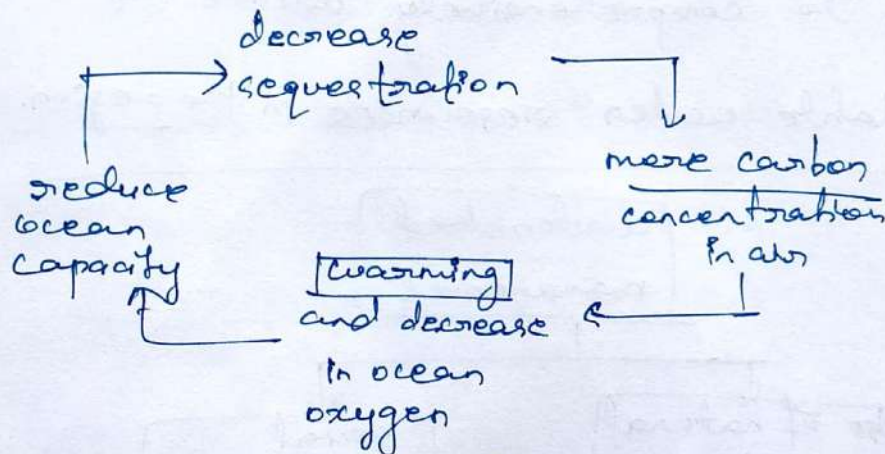
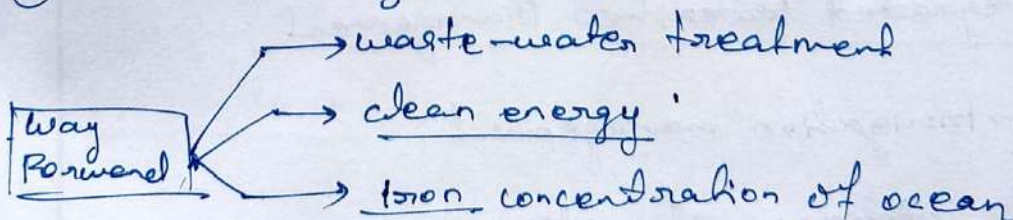


Fig. vicious cycle

- ② Affect air quality  
③ Affect food chain  
④ Global warming lead to sea level rise

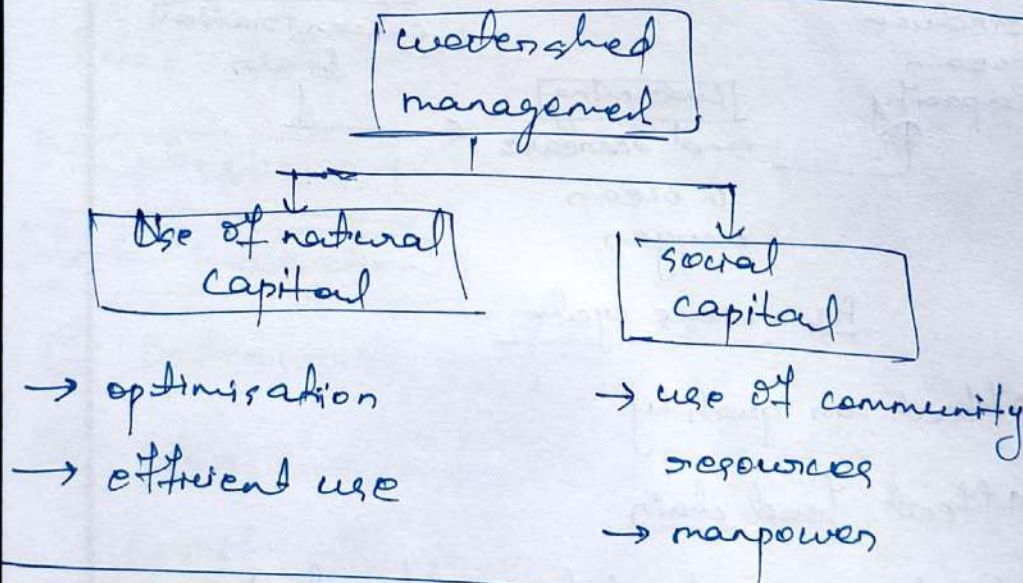


20. Watershed management can ensure effective use of both natural and social capitals. In this context, discuss how the concept of integrated watershed management can help meet the sustainable development goals in India. (250 words) 15

जलसंभर प्रबंधन प्राकृतिक और सामाजिक, दोनों पूंजियों का प्रभावी उपयोग सुनिश्चित कर सकता है। इस संदर्भ में, विवेचना कीजिए कि एकीकृत जलसंभर प्रबंधन की अवधारणा भारत में संधारणीय विकास लक्ष्यों को प्राप्त करने में किस प्रकार सहायता कर सकती है।

### Watershed management

Involves management of the entire area to comprehensively utilize the available water resources in the region.



### Integrated watershed Management

→ Irrigation management  
→ storage of water

→ efficient utilization  
 → distribution  
 → groundwater, surface water,  
 integrated management

Help in meeting SDG goals

- ① Improve water use efficiency
- ② Decrease instances of drought  
and hence food security (SDG 2)
- ③ Sustained agriculture income  
would ensure → health, nutrition  
and education for children
- ④ Potential for management of agriculture  
and thereby adoption of climate smart  
agriculture

Integrated watershed management must be accompanied by other efforts such as -

- 1) Micro-irrigation techniques - drip and sprinkler irrigation
- 2) Climate resilient afforestation
- 3) Waste water treatment
- 4) Reduce use of chemical in agriculture  
↳ it would otherwise affect water quality.

Watershed management in model village Piplerasi changed features for entire village.