

VISION IAS

www.visionias.in

GENERAL STUDIES (TEST CODE : 1413)

Name of Candidate	Subhankar Bala	Registration Number	677006
Medium Eng./Hindi	English	Date	09/08/20
Center	O.R.N.		

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
4	10	
5	10	
6	10	
7	10	
8	10	
9	10	
10	10	
11	15	
12	15	
13	15	
14	15	
15	15	
16	15	
17	15	
18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

- 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)।
- There are **TWENTY** questions printed in **ENGLISH & HINDI** इसमें बीस प्रश्न हैं अंग्रेजी और हिन्दी में छपे हैं।
- All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
- The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
- 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 (विस्तार) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेगा।
- Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
- 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 उसका अंश को स्पष्ट रूप से काटा जाना चाहिए।

16-B, 2nd Floor, Above National Trust Building, Bada Bazar Marg, Old Rajinder Nagar, Delhi-110060

Plot No. 857, 1st Floor, Banda Bahadur Marg (Opp Punjab & Sindh Bank), Dr. Mukherjee Nagar
Delhi- 110009

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 बाबड़ियों 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 करती हैं। उदाहरणों सहित विवेचना कीजिए।

We find a significant number of water conservation system of medieval India still present in India, which are of immense value in many aspects. Concept of water storage structures was mainly prevalent in south India and western India.

Medieval and ancient storage structures:

- ① In S. India in many parts tanks (eri) and smaller tanks (pereris) were built along the river as a buffer.
- ② In western India step wells near temples (Ramika Var in Gujrat) is beautiful and also efficient in water conservation.
- ③ Many other structures like Khadin, dong Kuhl in Himachal Pradesh was designed based on local topography and rainfall pattern.

Lesson for contemporary water concern:

- ① Local management of water resources based on local situation
- ② Changing tax based on usage of water from tanks ensure regular maintenance
- ③ Sustainable use of water to avoid water shortage in summer months.
- ④ Focus on water conservation through rainwater harvest and also use percolation tanks to fill up reservoirs.
- ⑤ Keeping the water source pure for protecting people from water borne disease

Thus there are various learning we can take from ancient & medieval water storage systems of India to tackle current water problem.

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 पूँजीवादी वर्ग का प्रभाव उत्तरोत्तर बढ़ा। चर्चा कीजिए।

After 1920-25 Indian capitalists contributed in many ways to Indian freedom struggle. Capitalist class in India were not necessarily subordinate to British industrialists. Many of them innovated new ways to explore market in the country. Gradually they wanted better control of finance, trade on Indian hands for mutual benefit.

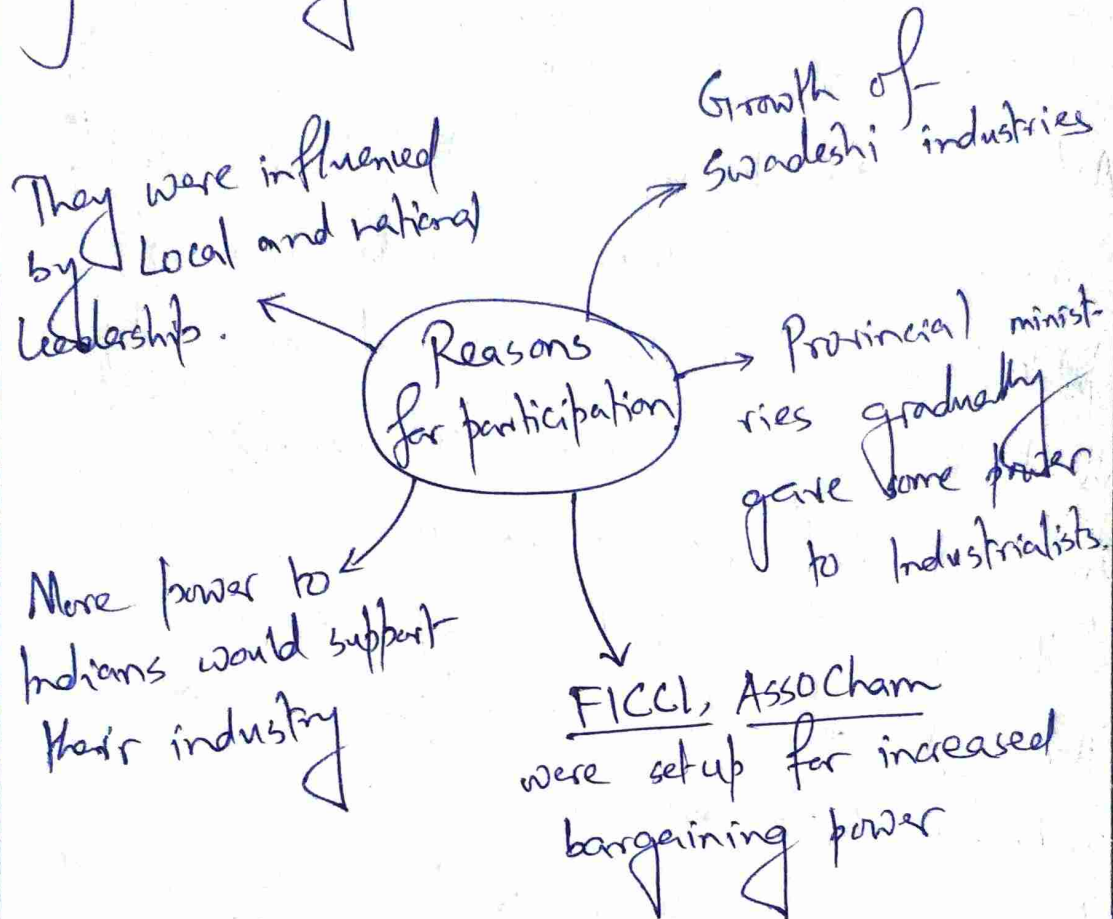
Influence of capitalists on freedom struggle:

- ① Most of the capitalists didn't participate openly by participating in protests, they provided monetary support necessary for the struggle.

Major industrialists include G.D. Birla, Lala Sri Ram, Purosotham das, ~~etc~~, Homimodi.

- ② Some industrialists like Jammalal Bajaj

actively participated and even went to jail during this time.



Thus although in a later stage capitalist class contributed to national movement, which led to Bombay plan, and post-independent industrial growth.

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।

British introduced contribution in education after charter act, 1813 by spending 1 lakh every year for education of Indians. It later resulted to a bigger scale of education, but its reach was limited and its character was not for educational growth.

Modern education by British:

- ① Macaulay's minute in 1835
- ② Wood's despatch in 1854 is the magna carta
- ③ Establishment of universities in Calcutta, Bombay, Madras
- ④ Several commissions to improve quality of education.

Restricted Reach and character:

- ① British wanted to make use of cheap labour available in India for clerical

work, thus the aim was to create a docile class.

② It was limited to only upper and middle class people in urban areas, as during independence >80% people were illiterate.

③ Many wanted to educate Indians as "White man's burden" or to implement "Downward infiltration" theory.

④ There was severe lack of scope for higher education & research in India.

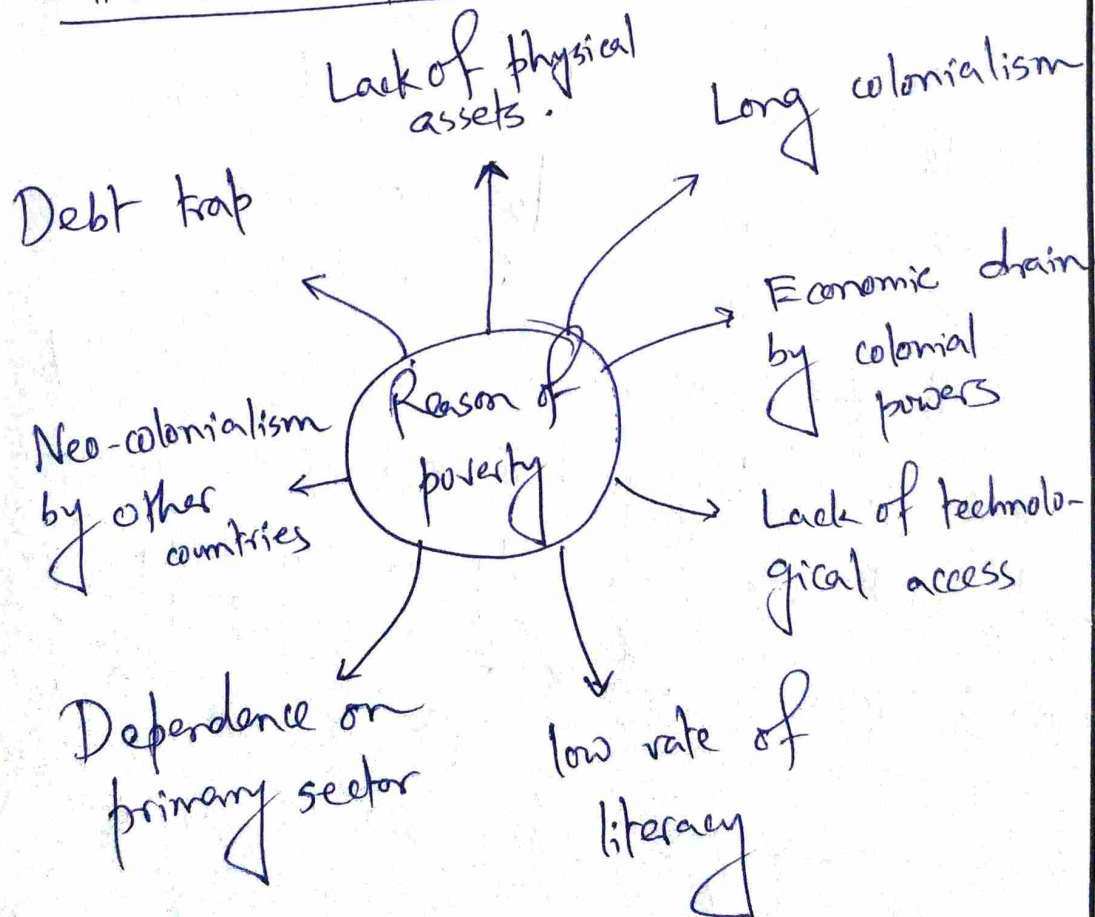
⑤ Most of the people from upper class got chance to study thus deepening the class divide & religious divide.

Thus although the educated intelligentsia later became torchbearer of Indian freedom struggle, overall British education system was limited and discriminatory.

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

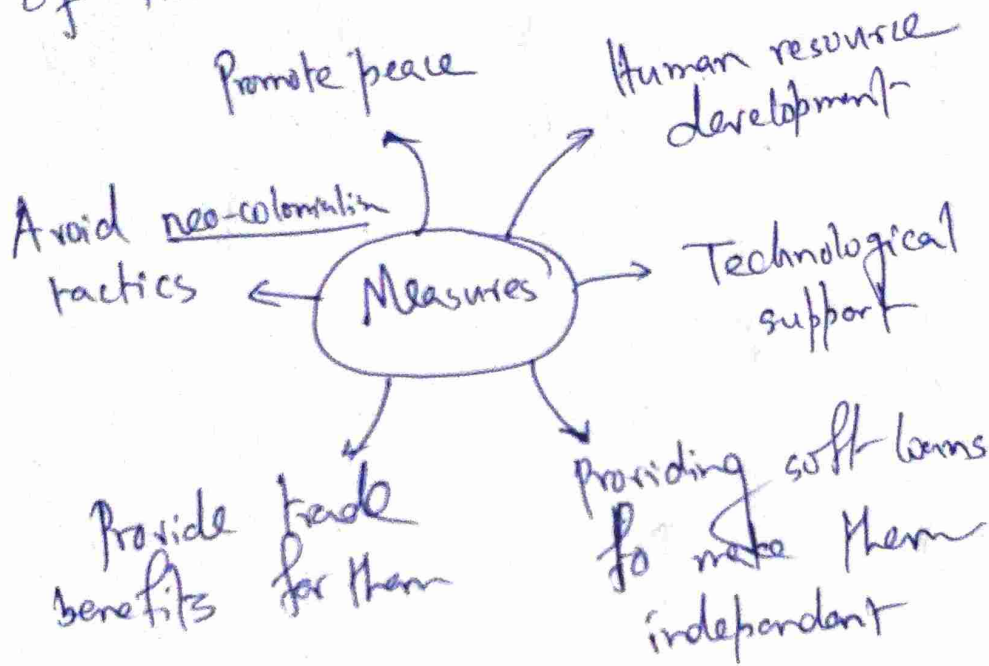
तृतीय विश्व के देशों में निर्धनता के कारणों पर प्रकाश डालिए और उनकी सहायता करने के लिए वर्ष 1980 की ब्रान्ट (Brandt) रिपोर्ट में अनुशंसित प्रमुख विचारों को सूचीबद्ध कीजिए।

Concept of third world country came up during cold war era. Third world countries comprises of recently decolonised nations which have much lower GDP compared to earlier colonial powers.



Key Idea suggested in Brandt Report, 1980:

↳ This report was brought in the UN suggesting measures to improve the condition of third world countries.

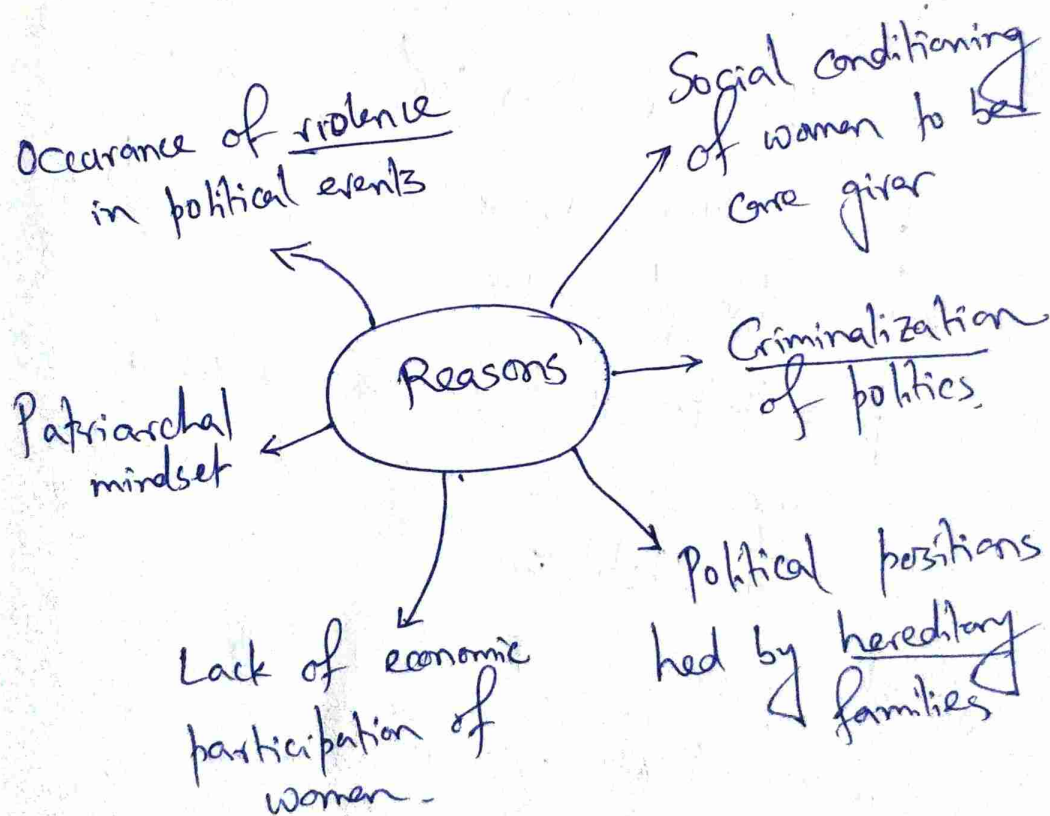


Although these measures weren't implemented in true sense by gradual economic integration, third world nations gradually are marching towards removal of poverty.

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।

In 17th Lok Sabha number of women MPs is only 14% when globally this is ~25%.. This shows the vast gap in participation of women in Indian politics. There are various reasons for this.



India was one of the rare countries where economic gender gap was higher than political gender gap and one way to reduce political gap is to reduce economic gap.

Measures → As implemented in Panchayati Raj system introduce idea of reservation for women

→ Social campaign to change the perception of society

→ Reduce criminalization in politics through laws.

→ Help local women leaders to come up in state and national level politics.

Political equality will surely help in achieving a more inclusive society as seen in all the nations where there are women PM they tend to perform better in gender equality

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।

Caste is a concept prevalent in Indian society where society is divided along the line based on occupation.

Race concept of stratification is a much more radical idea where one part of society is believed to be a super human compared to others.

Caste and Race as stratification process:

- ① Both divide human society along certain rules.
- ② In both system eventually few group tries to impose their ideas on other groups.
- ③ Both these ideas are dangerous for unity of a country or the whole world overall.

Important differences:

① Caste system was initially created to divide the society based on occupation initially this division was flexible and was meant no discrimination but race theory is based on dividing human based on their purity.

It is discriminatory from the beginning

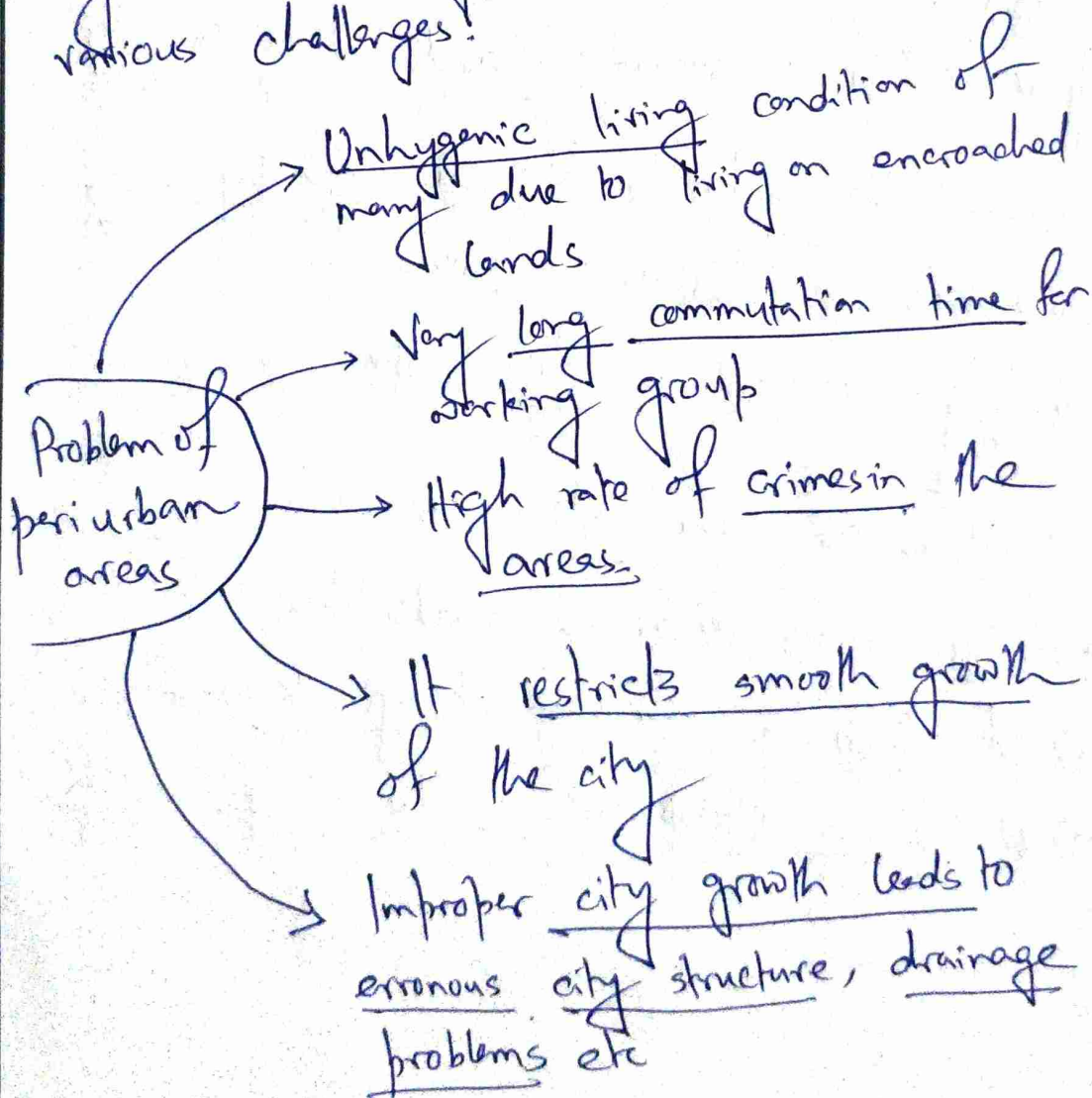
② As seen in Indian system initially caste system didn't create a divided society, but as seen in race theory Hitler who believed in pure Aryan race theory led to killing of millions of jews.

Thus although race and caste division both are harmful for the society and humanity race theory is much more dangerous and radical in its ideology.

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 refers to the areas around the perimeter of an urban centre, this area is at the edge of the city. Due to rapid urbanization periurban areas around big cities have grown multifold thus creating various challenges!



Suggested Corrective measures:

- ① Many illegal lands can be given legalized status to improve living condition.
eg: Dole by Odisha govt in Bhubaneswar city.
- ② Proper public transport system for the region
- ③ Proper registration of people living there to provide social security and health facilities
- ④ Create apt body to take care of hygienic condition of peri urban areas
- ⑤ Providing education facility in the locality

Thus as our cities are growing fast, peri urban areas needs to be tackled properly for smooth growth and better human development in the cities.

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 करने हुए, हबल स्पेस टेलीस्कोप ने ब्रह्मांड के संबंध में हमारी मौलिक समझ को बदल दिया है। गविस्तार वर्णन कीजिए।

Hubble space telescope was put in the space in 1990s which was placed for detailed analysis of every corner of the sky to bring out new information about various galaxies and stars and planets. In last ~25 years it has provided various important information to change perception of the universe.

Objectives of the telescope:

- To capture image of other galaxies in various wave length EM waves
- To study characteristics of other planets.
- To capture image of comets, meteors and many NEOs around the earth.
- To gain information about various cosmological events in various galaxies.

Changed the fundamental understanding of the universe.

- ① It has given information of hundreds of other planets, which are in the goldilock's zone (condition that is habitable)
- ② By taking image of other galaxies and its speeds it gave clear picture about the past and future of the universe
- ③ It helped in understanding concepts of dark energy, dark matter, gravitational waves of cosmology
- ④ It also contributed in establishing existence of a black hole at the centre of many other galaxies.

Thus as Hubble revolutionized the cosmology by the idea of Big Bang, Hubble telescope also contributed immensely in cosmology.

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।

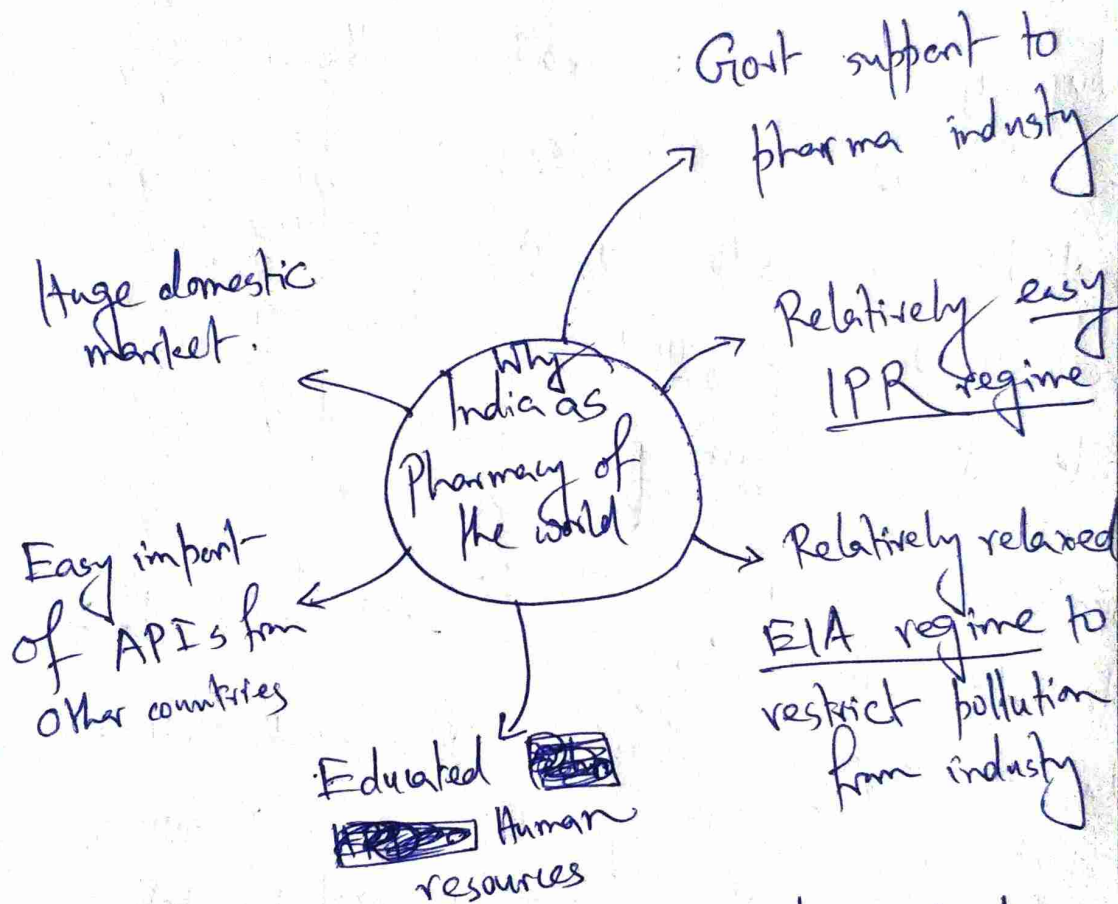
Pharmaceutical Industry is a footloose industry which is one of the reason for its specific location in the country. India is 3rd largest producer of medicines by volume, thus earning the title of "pharmacy of the world".

Location of Pharma industry:

① Initially when GST was not in place, ~~due~~ due to state's given benefits and centre's effort to implement equitable growth Pharma industry was present in the hilly states of Himachal & Uttarakhand.

② Later, due to economic integration again Pharma industry is shifting to near market and ~~to~~ near the ports of Gujarat, Maharashtra, due to ease of finance, transport, market, ports etc.

- ③ But not only in these states pharma industry is present in other parts like Southern India and Eastern India (W.B.).

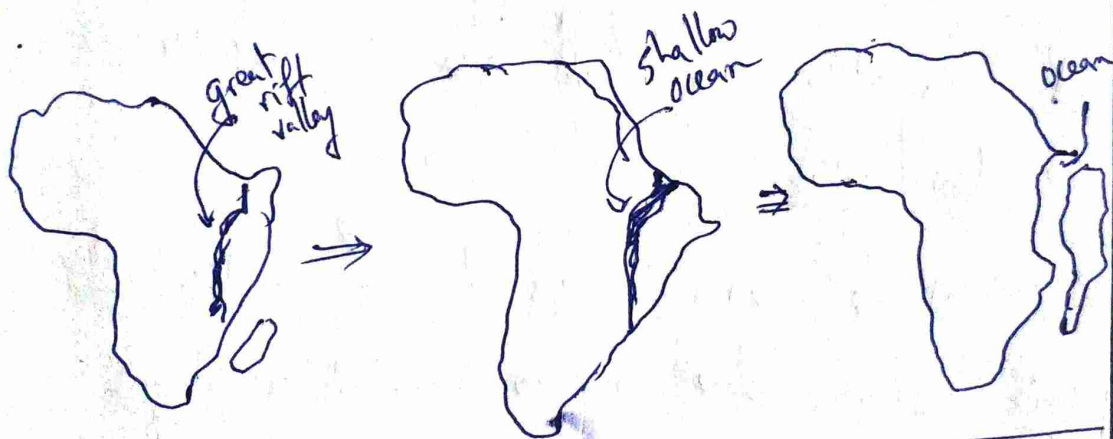


Thus during COVID-19 pandemic India will surely play a positive role in helping the world to get back on its feet faster.

10. Giving example, explain how continental rupture 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 rupture is a concept from continental drift theory, where continental masses float above the asthenosphere and sometimes breaks apart to create new continental mass and forming new ocean basin.



Process of continental rupture:

- Continental masses float along with oceanic plates.
- Due to rising & drawing limb of lava inside often continents face force which breaks the continent into parts along the weakest joint.

- Initially ~~and~~ a rift valley is created which is like a depression
- ⇒ Gradually it becomes a shallow land filled by water to form lakes or shallow sea.
- eg. (Current great rift valley and all lakes eg: Tanganiaka).
- ⇒ In later part it totally gets separated & creates a full sea in between 2 landmass.

Thus over a period of million of years often due to continental rapture new landmass gets created and also new ocean basin gets created.

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।

India has more than 1500 languages in the country and many of them are thousands of years old. From ancient time tradition of linguistic analysis is present in India. which includes analyzing the grammar, type of language, similarities and differences etc. This tradition is still present in the form of learning of languages.

Strong tradition of linguistic analysis:

- ① In Ancient India as Many language evolved from Sanskrit in many literature a comparative study is done for many language.
- ② As people used to interact with other people of other language a proper analysis of other language was necessary.

- ③ Many a times scholars defined proper grammars of a language.
eg: During Chalukya period proper grammar of Kannada language and Telugu was created.
- ④ In case of Bengali modern grammar was created in ~~1850~~ 1850s by Vidyasagar.
- ⑤ Linguistic analysis of Hindi, Urdu was prevalent even during Mughal period leading to growth of literature.

Continuous focus on preservation & transmission:

- ① Govt has notified certain language as classical language which includes Tamil, Telugu, Kannada, Malayalam, Odiya, Sanskrit.
- ② These language gets a cultural centres for conducting research on these languages.

- ③ Not only these many other language are studied extensively in many universities to track their change over time.
- ④ Also division of languages based on its sweetness, variety of words, available letters etc also shows the research on languages.

Thus undoubtedly there is an effort to preserve & transmit culture of linguistic analysis of Indian society.

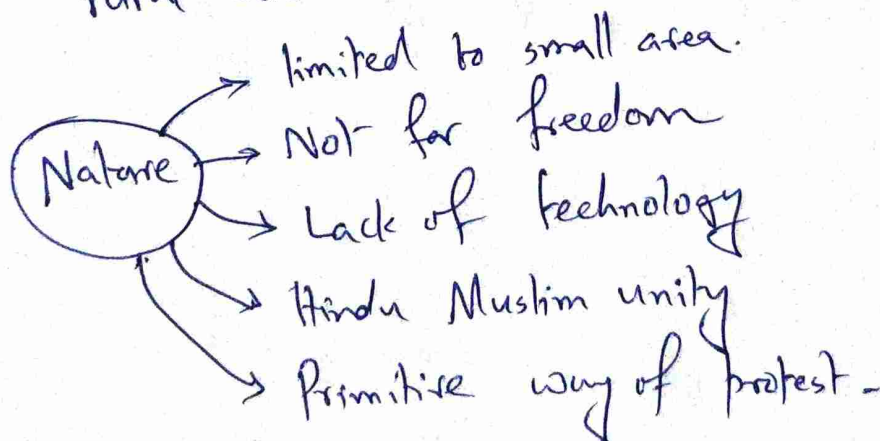
12. Explain, using examples, how the nature of peasant movements changed during the colonial period. (250 words) 15

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

Peasant movement refers to revolt by the farmers which was prevalent throughout the British period of more than 200 years. However the nature and intensity changed over time.

Peasant movements before 1857:

- ① Norkelberia Uprising: By Titumir in Bengal done by poor farmers in protest of new revenue system and high taxation.
- ② Revolt by Paglapanthis: In Kusutahi Pargana, it was done by farmers of rural areas.

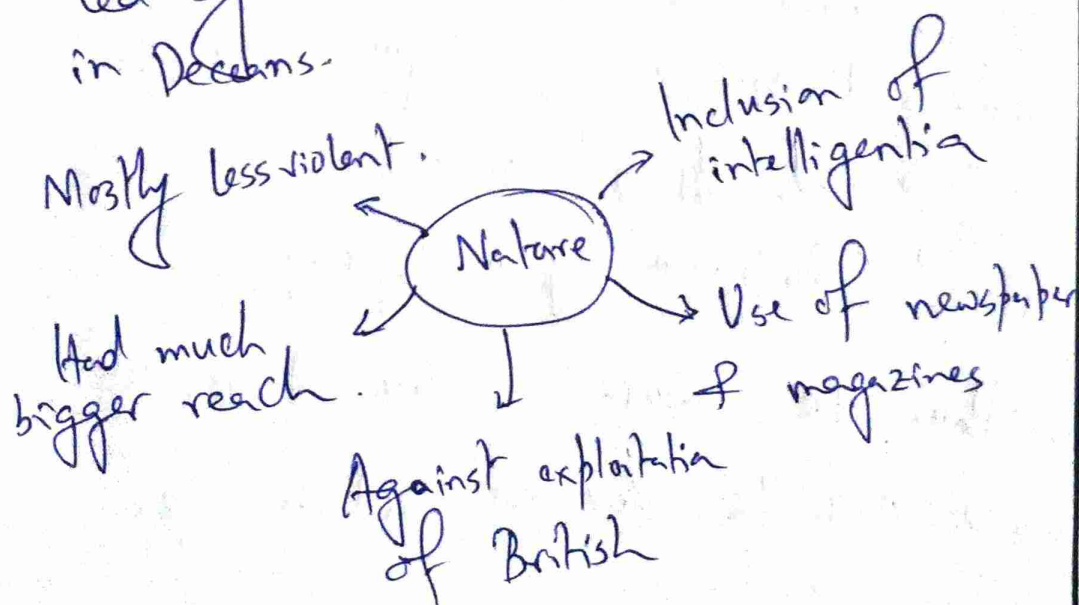


After 1857:

① Indigo revolt: by Vishu Vishwas & Digambar Biswas. in Nadia district against Indigo planter.

② Pabna Agrarian League: Fought cases in the courts ~~or~~ taking help of local intelligentsia to gain economic relief.

③ Ramrosi Peasant uprising: in 1870s led by Vasudev Balband Phadke. in Deccans.



Modern Peasant movements:

① Eka movement in UP

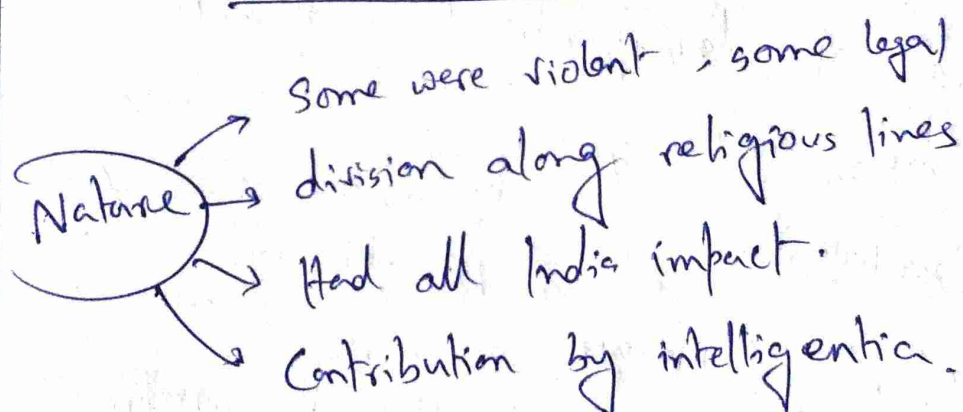
② Tebhaga movement in Bengal in

protest of $\frac{2}{3}$ rd of the produce as tax.

③ Telangana peasant revolt: much more violent, with communist ideology

④ Kisan Sabha movements: Using formal protests to gain some benefit during low price.

e.g. All India Kisan Sabha, 1936.



Thus the nature of peasant revolt changed over the time of British rule.

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।

Socialist movement in Indian struggle grew in 20s of 20th century when many young leaders gave their support to socialist ideas. Socialist movement had significant impact on policy of independent India.

Conditions & circumstances that led to Socialist movement:

- ① Growth of communist  Russia after 1917 and growth of USSR even during Great financial Crisis, 1929.
- ② Influence of many thinkers like Tolstoy on Indian leaders.
- ③ After war there was high price in market and severe British economic draining.

④ Pathetic condition of working class & peasants in India

⑤ High taxation by Princely states on its citizens

~~But~~ During this time initially J.L. Nehru & Subhas Bose were vocal leader of socialist ideas, later in 1930s

J.P. Narayan, Acharya Narendra das created Socialist Congress party.

Impact on Indian National movement:

① Even during Nehru's speech in 1920 future socialistic ideas were visible

② During S.C. Bose's presidency National Economic policy was created.

③ After independence India followed a socialistic path in future

④ It helped inclusion of common people

in national struggle.

Thus as in 1930s Communism and Socialism started to grow its influence in India, Socialism became one of the basis for India as a nation.

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

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

After the WW-II USA announced Truman doctrine. Unlike after WW-I as USA adopted isolationist policy under Woodrow Wilson. In Truman doctrine USA extended much help to Europe for reconstruction and also assumed leadership as a global power.

Components of Truman doctrine:

- ① USA will help Europe to get up on its feet soon.
- ② Unlike WWI no excessive pressure will be put on losing side creating future conflict.
- ③ Under guidance of UN there will be effort to maintain peace and stability to avoid future war.

- ④ Restrict the growth of communism in the world and help in the growth of "free world"

Part of Humanitarian part was strategic

- ① As USA extended help under Marshall plan European powers got back into shape very fast with 15-20% CAGR.
- ② It also relieved pressure from colonies thus led to a faster decolonization
- ③ It helped the western Europe to get more integrated with America.
- ④ Strategically it tried to reduce power of Communist Russia.
- ⑤ It helped USA's economy to grow fast to lead the global economy.
- ⑥ This plan also ensured a bigger market for USA globally.

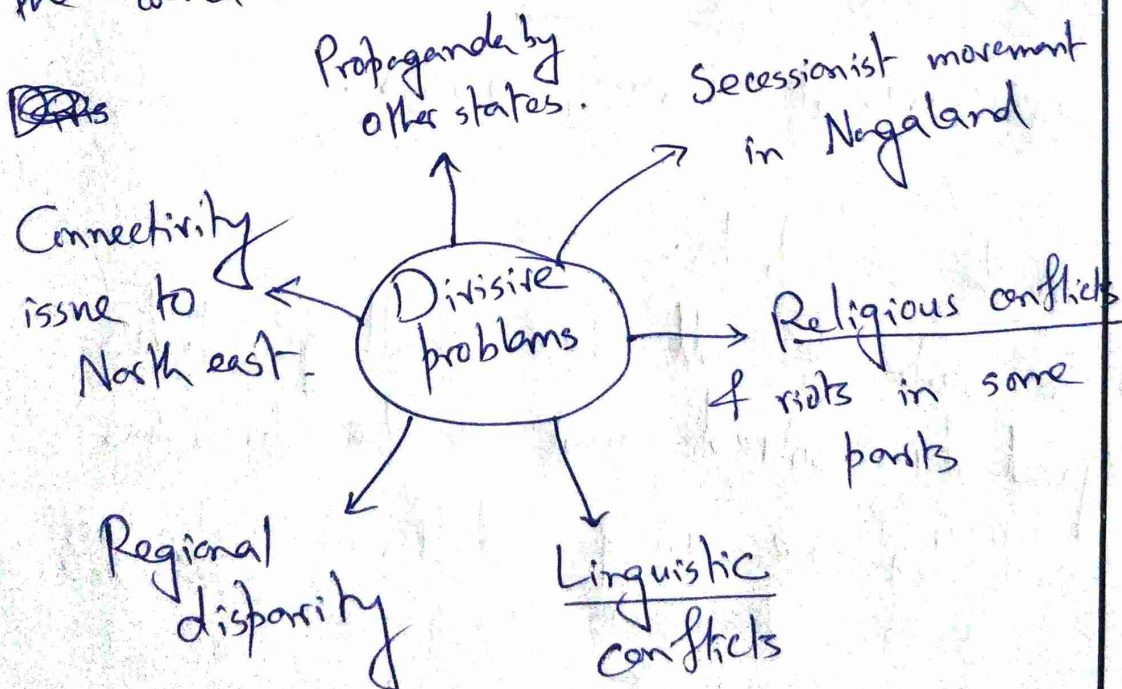
① It also led to the fear of domino theory of communist growth in future

Thus Truman doctrine actually pushed USA & USSR into the cold war in later period along with a prosperous western nations in future

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 मजबूत भी हुआ है। चर्चा कीजिए।

India is a diverse country in every sense and after the fall of Yugoslavia, USSR many estimated breaking down of a diverse India. But in spite of many 'divisive' problems prevalent India continued to be united and gradually marching towards becoming a strong economy of the world.



Existence of these problems:

- ① Problems of Khalistan issue, Nagaland & other states issue is prevalent. For a long time, many of which have subsided.
- ② Being a diverse country India always had multiple religion and problems of religious conflicts were also present.
- ③ Regional disparity, centralization of power was present from British period.
- ④ Propaganda and other acts of state and non state actors to harm India was present from 1950s.

Growth of India:

- ① In spite of all these challenges India gradually solved most of the problems one by one using different techniques.

- ② In spite of many issues idea of Indian identity has helped many parts to stay united.
- ③ As over time regions are getting benefit of progress, many of the issues are going to oblivion.
- ④ Taking pride in unity in diversity and creating provision for citizen centric governance helped many threats to subside.

Thus as still many problems are threatening India's unity India will gradually solve the issue to keep its unity and integrity intact in future.

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

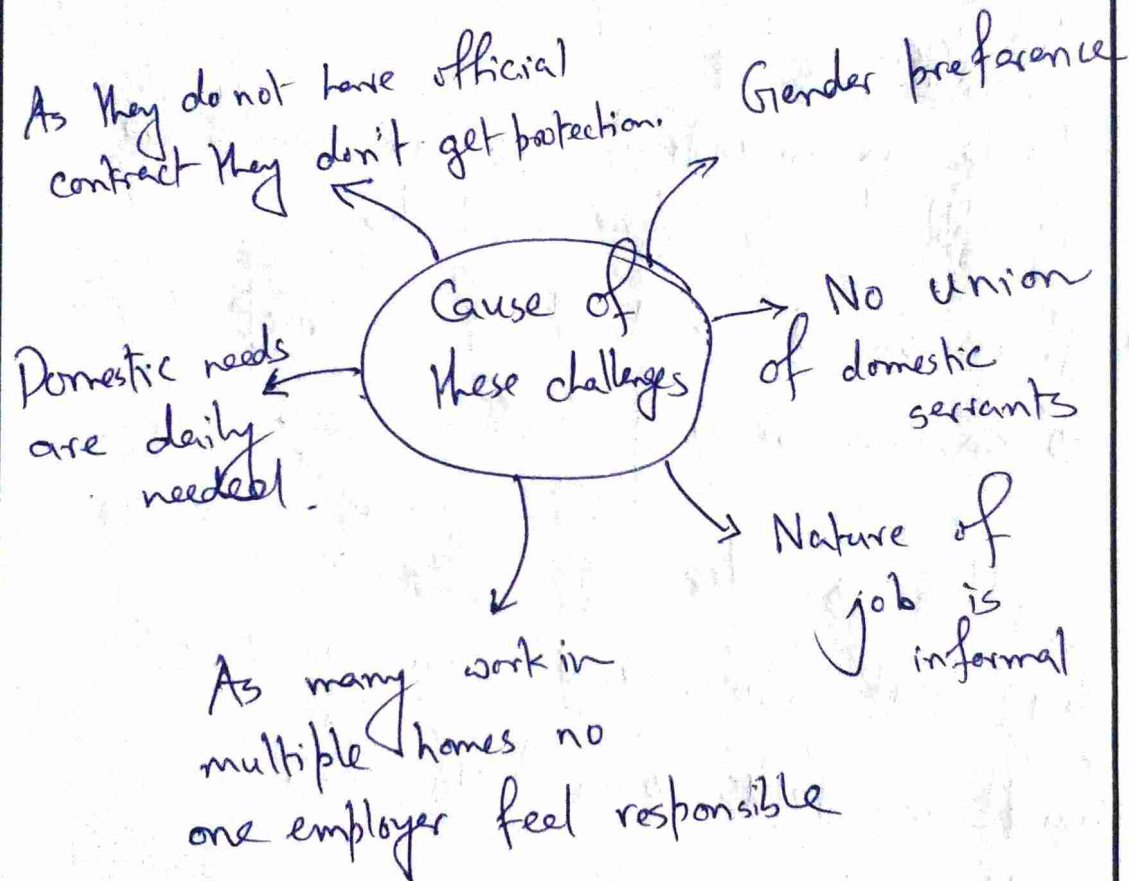
घरेलू नौकर आधुनिक भारत में श्रमिकों का एक अद्वितीय समूह है, जो सर्वव्यापी है किन्तु अदृश्य बना रहता है। श्रमिकों के इस वर्ग द्वारा सामना की जाने वाली चुनौतियों का उल्लेख कीजिए। साथ ही, इन चुनौतियों में योगदान देने वाले कारकों की विवेचना कीजिए और उन्हें दूर करने के उपाय भी सुझाएं।

Domestic servants are one of the basic need for a family specially in the towns and cities. As people are getting into economic activity domestic helps maintain domestic cleanliness, foods, and other household works. This group of workers are mostly in unorganised sector and face several challenges.

Challenges faced by Domestic servants:

- ① No security of tenure
- ② No official holiday given
- ③ Often have to face violence in work place.
- ④ They are paid much below minimum wage.

- ⑤ They do not get any social security
- ⑥ Due to excessive work often their health gets damaged at early age.



Measures to address the issues:

- ① In cities there should be union of domestic servants which will ensure minimum wage.
- ② Govt must prescribe limit of wage

based on daily working hour.

③ Provision for saving some money for pension and future emergency using central govt yojana for informal workers.

④ Laws on industrial workers should also be applied to 'domestic helps.

⑤ There should be kind of contract to ensure security of tenure.

Thus as domestic helps ^{are} now a big part of informal economy there should be focus to improve 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।

According to a recent survey in urban areas more than 50% people are migrant (internal or external). As our cities are growing, we can say migration is a crucial component of new India.

Migration in Contemporary India:

• Rural to Urban:
and Urban to Urban

- job
- Education
- Marriage
- Other economic opportunity
- Better living quality.

• Rural to Rural

- Marriage
- security issues
- Others.

• As the country is getting more connected physically and economically more migration is taking place.

Impact of migration on Society:

- Reduced influence of Caste
- Remittance & rural growth.
- Growth of nuclear families
- More freedom to the women in society
- Increased Cost of living in cities
- Rise in informal economy in cities
- Poor living condition in urban slums
- Integration of the country.

Economic Impact:

- It helped to implement the green revolution
- It increased seasonal migration to cities thus augmenting income
- Better business opportunity in different part of the country.

→ Due to migration there is feminization
in agriculture in rural areas.

➡ Thus as India's economy is growing fast it is supported by migration. Although unrestricted migration showed its negative side during COVID-19 lockdown, we need to take policy level decision to make positive use of migration in post COVID world.

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।

'Ozone hole' was a term coined in 1980s when scientists observed a big region over Antarctica with very thin layer of Ozone layer in Mesosphere. Ozone layer in top of Stratosphere protects the earth from harmful UV rays of the sun, which can cause cell mutation and cancer.

Process of Ozone hole formation:

- ① There are certain manmade items which produces gases which are released into atmosphere.
e.g. CFC, HCFC, etc

② These gases when rise up in the atmosphere and reach the stratosphere due to their interaction with stratospheric clouds which contain Sulphuric & Phosphoric compounds, a free chlorine ion (Cl^-) is produced.

③ This  (Cl^-) interacts with Ozone (O_3) to produce oxygen O_2 and (ClO^-) again after a reaction another O_3 breaks down to O_2 and again Cl^- gets generated. Thus this creates huge depletion of O_3 from Ozone layer creating a zone with less width of ozone layer.

Why Antarctica has bigger Ozone hole.

→ Polar stratospheric cloud which interacts with the compounds & creates Cl^- needs lower temp to form.

⇒ As both poles are circulated by polar vortexes to contain air within pole region. It is stronger in South pole due to less land mass in Southern hemisphere.

⇒ This leads to much lower temp in South pole's stratosphere forming stratospheric clouds, thus accelerating the Ozone depletion process.

This is the reason why Antarctica's ozone hole is much larger than Arctic's ozone hole.

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 ~~certain~~ certain part of ocean water where amount of oxygen dissolved is much lower compared to other parts, thus leading to no marine life in the part.

Cases of Ocean deoxygenation is visible in some part of Gulf of Florida, Black sea etc.

Cause of Ocean deoxygenation:

- ① When amount of freshwater going into the ocean is changed to a higher level, its oxygen concentration changes
- ② Due to dissolved nutrients, eutrophication

happens in some part of the ocean, thus excessive biological activity depletes the dissolved oxygen.

③ When a certain part of ocean water is not part of any ocean current, there is no exchange of water, it can lead to anoxic water.

④ Due to global warming ocean temp is increasing this increased stratification of ocean water layers reducing interaction between lower and upper layer, leading to less oxygen in upper layer.

Implication of Ocean deoxygenation:

① Creation of dead zones in oceans
e.g. Part of gulf of Florida.

② Impact on ocean current circulation.

③ It will change concentration of ocean algae, which are crucial in controlling CO_2 in atmosphere

④ Impact fishing grounds.

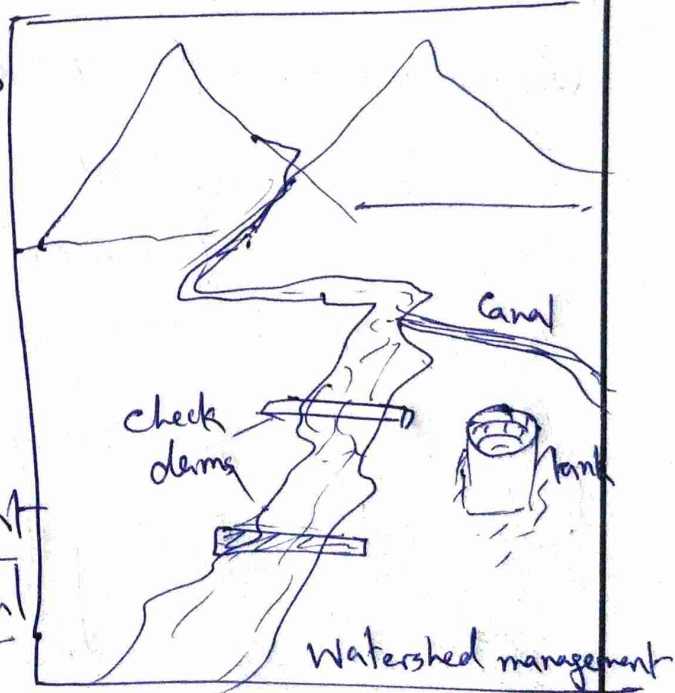
⑤ Can lead to Coral bleaching.

⑥ Thus although Ocean deoxygenation is not- discussed much UNFCCC highlighted its importance in an article in recent times.

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 refers to overall management of water resources, its sustainability and usage to maximize gain in a sustainable way. During a time when India is facing water crisis in many parts, watershed management will help in effective use of both natural & social capitals.



Watershed management & Natural & Social Capitals:

- ① It will ensure water sources are not exploited unsustainably

- ② Through check dams, percolation tanks it will ensure year around water availability.
- ③ It will also reduce impact of desertification.
- ④ It will create buffer against flood & drought, thus preventing soil erosion.
- ⑤ It will also help in reducing crop loss, thus will help in food security.
- ⑥ It will help many regions to engage in proper economic activity without worrying about water availability.

Integrated watershed management & SDGs:

- ① As drought and flood are a major cause of poverty it, will reduce both thus reduce poverty (SDG-1)
- ② By ensuring irrigation it will reduce hunger (SDG2)
- ③ Effective watershed management will also

ensure pure drinking water, thus a
better health (SDG-3)

- ④ Through run off river & small hydro
it will provide sustainable energy.

(SDG-7)

- ⑤ It will also create economic opportunity
in the blue economy. (SDG-8).

- ⑥ Integrated watershed management will help
in inclusive growth thus reduced
inequality (SDG-10).

- ⑦ It will also promote sustainable
consumption. (SDG-12)

- ⑧ It will also improve life under water
due to better usage (SDG-14).

Thus undoubtedly Integrated watershed
management will play a big role in
achieving our SDG targets by 2030.