

**1. What are the effects of globalization on India's medium scale enterprises?****Examine.****Approach:**

Question is straight forward; the student is expected to write the impact of globalization on Medium Scale Enterprise in India. The student should focus on the economic as well as the regulating changes happened after the LPG reforms particularly.

**Introduction:**

The process of globalization is an inevitable phenomenon in human history which has been bringing the world closer since the time of early trade and exploration, through the exchange of goods, products, information, jobs, knowledge and culture. Globalization is the process of integration of the world into one huge market. It provides several things to several people with removal of all trade barriers among countries. Globalization happens through three channels: trade in goods & services, movement of capital and flow of finance. Globalization in India is generally taken to mean 'integrating' the economy of the country with the world economy. The real thrust to the globalization process was provided by the new economic policy introduced by the Government of India in July 1991 at the behest of the IMF and the World Bank.

**Body:**

Indian small scale industry is playing an imperative role in the economic expansion of the country and have vast approaching for employment generation. Increasing small scale sector units also results in decentralized industrial development, better distribution of wealth and investment and entrepreneurial talent. The government has initiated several policies for the growth and development of small scale industries. Post liberalization economic conditions have created immense growth prospect for the small scale industries. The Micro, Small and Medium Enterprises in India are acting as power and spirit of economic growth in the 21st century.

**Positive Impact:**

Invasion of foreign investment and technology. The SSIs in India suffer from outdated technology and sub-optimal scale of operation. Many foreign companies have ed up with Indian SSIs and helped them to use better technology, managerial skill etc.

Opportunities to enter the world markets: Globalization has opened up the economy and integrated it with the world economy. The SSIs enjoy the benefits of selling their products and services to the world market rather than being confined into domestic market. The free economy ushers inaccessibility to bigger markets, greater linkages for SMEs with larger companies and marketing outfits, improved manufacturing techniques and processes.

Expanding the areas of business: SSIs have been able to identify many uncommon but highly promising business areas like outsourcing, medical transcription, clinical research trials, sub-contracting, ancillarization and many new technologies like biotechnology, nanotechnology etc which are attractive for the new generation SSI entrepreneurs.

**Free flow of capital:** In a liberalized economy, banks would try to find out new avenues of giving credits to increase their profitability. Thus, supply of funds may be easier. Development in money market would initiate development in capital market

**Less procedural problem:** As the economy is mainly market driven; there is less Govt. intervention, red tapes, less control on import and export etc. The SSIs would be allowed to work in a free environment.

**Increased Customer Satisfaction:** As the domestic market gets competitive, small and medium firms try to satisfy the consumers in every possible way. They try to produce products as per the needs and preferences of the consumers and satisfy the customers in best possible way.

**Opportunities for generation of employment:** Being labour-intensive in nature, the SSIs make significant contribution in employment generation and expanding industrial network in rural areas. This sector nurtures the traditional skills and knowledge based small and cottage industries.

**Regional disparity Removal:** People from remote areas have the tendency to migrate to urban areas in search of jobs. This creates excessive pressure on urban areas and initiates social and personal problems. This problem can be addressed by setting up a network of micro, small and medium enterprises in economically backward areas.

**Negative impact**

Though there are many benefits derived from the process of Globalisation, it has resulted in some serious constraints on the growth of SSIs in India. High level competition. The SSIs face ruthless competition from the large domestic firms and multinationals armed with improved technology, managerial ability, skilled workers, marketing skills, better product quality, and wide range of products. The small firms find it difficult to maintain their existence as the cases of merger and acquisition are continuously increasing.

**Problems related to finance:** Financing has always been a major problem for the small and medium industries in India. The SSIs mostly depend on internal sources of finance (personal savings, loan from relatives, and loan from local money lenders) than that of institutional financing by banks and other financing institutions.

**Poor Technology Base:** There exists considerable heterogeneity among the SSIs in India. A small percentage of firms operate with sophisticated technology base whereas majority of firms use outdated technology. They suffer from low productivity and poor product quality. Due to their small size, they cannot enjoy large-scale production economies.

**Delayed payments:** The small firms find it difficult to recover their dues from the large firms and even from Government Departments due to complex payment procedure and corruption. Due to lack of funds, they cannot employ credit collection machineries (like factoring services). The large firms force them to offer long credit period and even pay advance to ensure timely supply of materials

**Inadequate infrastructure facility:** Infrastructural lacking includes inadequate power supply, transportation, water supply etc. Small firms cannot bear the cost of setting up independent power supply unit. They have to depend on irregular power supply from the electricity boards. Inadequate transportation system increases cost of production.

**Shortage of Skilled workers** Though India has no shortage of human resource, most of them are unskilled workers. Large firms pay higher remuneration and employ

skilled workers. The SSIs have to operate with unskilled or semi-skilled workers. Thus, the SSIs suffer from low managerial capabilities.

**Problems of Marketing and Distribution:** Marketing is probably the most neglected and less explored problem for Micro and Small firms. Most of them do not have any well formulated marketing strategy, market research programmes, innovative advertisement techniques etc. Most of the SSIs do not have adequate monetary support to develop marketing section and many are not aware of modern low-cost marketing techniques (blogging, sending mails, developing web site for the company).

**Conclusion:**

Small industry in India finds itself in an intensely competitive environment since 1991, Thanks to globalization, domestic economic liberalization and dilution of sector specific protective measures. As a result, its growth in terms of units, employment, output and exports has come down. This has resulted in less impressive growth in its contribution to national income and exports though not in terms of employment in the 90s. Lack of reliable and stable economic infrastructure, reduced growth of credit inflow and technological obsolescence, which together would have led to inferior quality and low productivity are the major banes of small industry in India. But at the same time, international and national policy changes have thrown open new opportunities and markets to Indian small industry. Technological upgradation and in house technological innovations and promotion of inter-firm linkages need to be encouraged consciously and consistently. Financial infrastructure need to be broadened and adequate inflow of credit to the sector be ensured taking into consideration the growing investment demand including the requirements of technological transformation. Small industry should be allowed to come up only in designated industrial areas for better monitoring and periodic surveys through DICs should enable policy corrections from time to time. A technologically vibrant; internationally competitive small industry should be encouraged to emerge, to make a sustainable contribution to national income, employment and exports.

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**2. Has globalisation led to deterioration of societal values? Critically examine.**

**Approach**

The candidate needs to examine whether globalisation has led to deterioration of societal values and also provide counter views, while also substantiating with proper examples.

**Introduction**

Social values refer to wider notions of collective identity like religious values, attitudes towards materialism, moral beliefs, and a sense of collective awareness and are a broader and more encompassing concept than social capital where a more globalized world both changes and interacts with nationally based value systems.

**Body**

Globalization is a combination of economic, technological, sociocultural and political forces and it refers in general to the worldwide integration of humanity and the compression of both the temporal and spatial dimensions of planet-wide human interaction.

Broadly speaking, the process of globalization has two aspects. The first refers to those factors – such as trade, investment, technology, cross-border production systems, flows of information and communication – which bring societies and citizens closer together.

The social dimension of globalization refers to the impact of globalization on the life and work of people, on their families, and their societies. Beyond the world of work, the social dimension encompasses security, culture and identity, inclusion or exclusion and the cohesiveness of families and communities.

Like the two faces of Janus, globalization at times has been inclusive and integrating and at other times disintegrating and exclusivist. Here, Globalisation and its deteriorating effects on globalisation can be seen from the following points –  
Nuclear Families: The western influence of individualism has led to an aspirational generation of youth. Concepts of national identity, family, job and tradition are changing rapidly and significantly.

Old Age Vulnerability: The rise of nuclear families has reduced the social security that the joint family provided. This has led to greater economic, health and emotional vulnerability of old age individuals.

Pervasive Media: Foreign media houses have increased their presence in India. India is part of the global launch of Hollywood movies which is very well received here. It has a psychological, social and cultural influence on our society.

McDonaldization: A term denoting the increasing rationalization of the routine tasks of everyday life. It becomes manifested when a culture adopts the characteristics of a fast-food restaurant. These effect traditional sources of livelihood as well as societal norms.

The penetration of global music has resulted in the marginalisation of traditional music among different cultures of the world. Today, pop music and its local variations can be heard in all social settings from weddings to religious festivals and birthday celebrations.

One of the most vehement criticisms of globalization is that it threatens to create one homogeneous worldwide culture in which all children grow up wanting to be like the latest pop music star, eat Big Macs, vacation at Disney World, and wear blue jeans, and Nikes.

But at the same time, globalisation also has its benefits in terms of societal values, which is evident from the following points –

Globalization promotes the integration of socio-cultural, political and economic systems of nations into global ones. Sociologists consider this process as cultural and intellectual assimilation.

Under the influence of globalization, openness, information coming from the media, and contact with other cultures, traditional values are changing.

Access to education – On one hand globalisation has aided in the explosion of information on the web that has helped in greater awareness among people. It has also led to greater need for specialisation and promotion of higher education in the country.

The Global Village/ Global Consciousness – This means that more and more people have a more 'global outlook' and increasingly identify with a global audience – for example, television reporting of natural disasters in developing countries result in

people in wealthier countries donating money to charities such as Oxfam to assist with relief efforts.

As globalization may lead to one single world culture or a homogenized culture, it is also likely to lead to new permutations, new combinations, new options and new cultures.

### **Conclusion**

Globalization has made the world as a small village, and it tends to go further, like wiping all borders among countries where societal values are changing under its influence but they do not change simultaneously, giving rise to the phenomenon of 'glocalisation'.

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### **3. How does globalisation differ from westernisation? In the Indian context, what has been more profound of the two? Discuss.**

#### **Approach**

Candidates are expected to write about globalisation and westernisation first. And explain how both differ from each other. Also discuss in Indian context which one has profound impact.

#### **Introduction**

Globalisation and Westernisation are two sides of the same coin. Globalisation is a phenomenon that has born since the human race first made it to this world and Westernisation is an ever occurring phenomenon that has existed since the 19th century when the Ottoman Empire began modernising from the powerful, industrialised Western civilisations.

#### **Body**

Globalisation and westernisation:

Globalisation refers to the growing interdependence between different people, regions and countries in the world as social and economic relationships come to stretch world-wide.

Westernisation is the changes brought about in Indian society and culture as a result of over 150 years of British rule, the term subsuming changes occurring at different levels of technology, institutions, ideology and values.

Difference between globalisation and westernisation:

Globalisation is neither a purely economic process nor is related to communications only. It is a broad process of increasing socio-economic-industrial-trade-cultural relations among the people living in all parts of the globe.

Whereas emphasis on humanitarianism and rationalism is a part of westernisation which led to a series of institutional and social reforms in India. The evil institutions of sati, untouchability and purdah got condemnation from the spread of the notions of equalitarianism and secularisation.

Globalisation accepts and advocates the value of free world trade, freedom of access to world markets and a free flow of investments across borders. It stands for integration and democratisation of the world's culture, economy and infrastructure through global investments.

Establishment of scientific, technological and educational institutions, rise of nationalism, new political culture and leadership in the country, are all by-products of westernisation.

As a matter of fact, both the processes go hand in hand. It is found that sometimes increase in westernisation also boosts the process of globalisation and vice versa. Both highly influenced the Indian society let us study which process has profound impact.

It was with 1991 reforms in India led to greater economic liberalisation which has in turn increased India's interaction with the rest of the world. Globalisation have facilitated the world in becoming a "global village". Increasing interaction between people of different countries has led to internationalisation of food habits, dress habits, lifestyle and views.

Impact of westernisation starts in India with interaction of European powers and it has profound impact then globalisation. In contemporary India, when we talk about westernisation, a tremendous change has come in rural India where most of India resides.

The European missionaries worked in the different parts of the country, particularly in those which were backward and inhabited by tribals and untouchables. This brought the weaker sections closer to westernisation.

Westernisation also introduced science and technology in Indian society. This brought railways, steam engines and technology. As a result of this, the Indian society moved towards industrialisation. This also gave encouragement to urban development and Migration from village to town and cities also increased.

Due to British rule freedom struggle gave the Constitution of India it introduced new value of secularisation. Secular India is conceived as a nation charged by the idiom of a rational and bureaucratic society.

The impact of five year plans a western idea has brought the village people in the wider network of communication and modernisation. The democratic institutions such as Panchayati Raj and massive spread of education have brought the villagers to come closer to westernisation.

Also science and technology came as a setback to village industries and local arts and artefacts, Subjugation of the local culture, loss of world diversity, conflict between core and peripheral values etc. For example, harassment against women is blamed on westernisation, diseases due to adoption of lifestyles or eating habits that are not supported by the local climatic conditions.

### **Conclusion**

We cannot say that the impact of globalisation and westernisation has been totally positive or totally negative. It has been both and are still associated as in modern times, rationalism and scientific education, that fuel modernisation, have their origin in globalisation and westernisation is often perceived as a sub-process of modernisation.

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### **4. What are your views on the process of de-globalisation? How will it affect the countries of the world in general and India in particular?**

**Approach-** Candidate is expected to define de-globalisation and outline the effects of the process on advanced economies and developing world including India. Answer can be concluded by stating importance of globalisation in modern world.

### **Introduction**

The term de-globalisation is used by economic and market commentators to highlight the trend of several countries wanting to go back to economic and trade

policies that put their national interests first. These policies often take the form of tariffs or quantitative barriers that impede free movement of people, products and services among countries. The idea behind all this protectionism is to shield local manufacturing by making imports costlier.

### **Body**

#### **Globalisation**

Globalization refers to the economic, social, and political integration of nations. It entails the spread of products, technology, information, and jobs across national borders and cultures. In economic terms, it describes an interdependence of nations around the globe, fostered through free trade.

#### **De-globalisation**

It is the process of diminishing interdependence and integration between the nations. It is characterised by the decline in economic trade and investment between countries.

#### **Effects of de-globalisation**

**Trade Protectionism:** The recent trade war between the US and China indicates a change in attitude of AEs in protecting their interests at the cost of developing countries.

Trade is not growing as quickly as before the Great Financial Crisis of 2008 that may be the consequence of decreased investment in technological innovation.

**Immigration Control:** Instances of immigration control by US, UK and other European countries have been dominant in past one decade.

**Brexit Movement:** Brexit and 'Make America Great Again' are symptoms of underlying processes of de-globalization that have already generated significant trade and investment uncertainty. This has had a concrete impact on trade & investment flows as firms and consumers are adjusting behaviour in anticipation of further trade shocks.

**Flow of Capital:** Cross-border financial flows have been reduced due to uncertainty in the global policy making and increased protectionism by Advance economies.

**Labour Market Loss:** The major hurdle faced by the AEs is the death of relatively low skilled sectors like textile and the support economies that grew around it. There are varying estimates of the job losses caused by cheaper imports from China and other emerging economies.

**Growing Inequality:** The slow pace of technological change in AEs had resulted in the stagnation of blue collar incomes which seems to be the major cause of rising inequality in the AEs.

#### **Impact of de-globalisation on India**

**Economic impact-**It will lead to protectionism with reduced cooperation among countries that will hurt Indian trade and exports. It will destroy employment opportunities because as it will prevent outflow of skilled people due to protectionist measures like visa regulations. This will impact their employability and remittance to the nation.

It may lead to increased import costs due to lesser choice and options and manufacturers and producers would have to pay more for equipment, commodities, and intermediate products from foreign markets.

**Political impact:** It would affect polity leading to instability in political framework of nations due to rise in prices and cost of living may lead to civil Uprisings.

Impact on technology: These tendencies limit technological advancement of the world as whole and of developing countries in particular. Limited knowledge sharing, lack of flow of technology to developing countries limit advancement in science.

Impact on Environmental conversation: Due to non-cooperation among nations it will impact environment conservation efforts in India. It will reduce required funding and would jeopardise efforts to conserve environment and tackle environment change. It would lead to lack of coordination at international organisations.

Impact on security: Due to lack of coordination among various nations, security around the world along with India would impact. It will not only increase economic risks, but would provide an opportunity for terrorists to carry out violence due to lack of coordination among various law enforcement agencies.

### **Conclusion**

De-globalisation erodes the advances made by globalisation. Integrated world economy as a one family enables not just free flow of goods and services but also free flow of people, ideas, cultures and strengthens the spirit of humanity. Beyond economy it hampers the speed of our new evolution in global direction. Rise of hatred, intolerance, racism and suspicion are the result of our narrow outlook. We have to embrace the spirit of globalisation minimizing its ill effects.

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## **5. What measures have been initiated by the government to make Indian enterprises more competitive in the global market? Discuss.**

### **Approach**

Since the question is asking you to discuss, it necessitates a debate where reasoning is backed up with evidence to make a case for and against an argument and finally arriving at a conclusion. In simple terms an examiner expects one to discuss various perspectives and present a logical argument.

### **Introduction**

Manufacturing in India was high-cost and not really competitive. If there is strong competition, you will make all efforts to improve your products, reduce your costs. That has not happened. Only a few sectors such as telecom and auto became competitive, and that has led to products in India being world class, but those are very limited sectors.

### **Body**

The government is taking a series of measures to make India highly competitive in the global economy. These includes:

The government announced Production-linked incentive (PLI) scheme for 10 key sectors to spur growth in manufacturing in a big way.

This (PLI scheme) is one of the biggest schemes that the government has come out with to support the private sector in manufacturing with objective to provide a major impetus to manufacturing and exports. It is a \$26-billion scheme, which provides production-linked incentives in 10 champion sectors and this five years of support should spur growth in manufacturing in a big way.

And, the PLI scheme for other sectors is going through the process of approval. In the auto industry, there is a lot of push from the government on domestic manufacturing.

There is effort from the government in creating an assured demand visible to investors in the future.



Indian government has adopted “Make in India” as a core policy initiative to encourage and accelerate growth in manufacturing sector and make Indian market highly competitive in global economy.

Indian government is trying to make smart investments in asset productivity in order to increase the manufacturing productivity such as efficient line balancing, lean plant layout, and process de-bottlenecking.

In order to enable itself to expand economic hubs beyond tier 1 cities, the government is trying to develop localized services and local networks across the country.

### **Conclusion**

Indian manufacturing, for decades, has been operating at a growth rate of 6-8% a year. The government is trying to get back to it by the end of this year. But the real issue is that it is not enough, as the finance minister said in the budget speech. A double-digit growth in manufacturing is required if the \$5 trillion economy target is to be met. The Union Budget is an important milestone. It's a forward-looking growth centric, capacity building and debt-funded budget aimed at securing long-term economic growth and global competitiveness.

### **6. What are the key traits of a socially empowered community? Illustrate.**

#### **Approach:**

Question is straight forward in its approach students are expected to write about the traits of socially empowered communities in India also it is important to mention examples as well.

#### **Introduction:**

Social Empowerment means all the sections of society in India, have equal control over their lives, are able to take important decisions in their lives, and have equal opportunities. Without empowering all sections of society equally, a nation can never have a good growth trajectory. It is understood as the process of developing a sense of autonomy and self-confidence, and acting individually and collectively to change social relationships and the institutions and discourses that exclude poor people and keep them in poverty.

#### **Body:**

Perceptions of being empowered vary across time, culture, and domains of a person's life-

A low-caste person feels empowered when he/she is given a fair hearing in a public meeting, which is comprised of men and women from the different social and economic group.

A woman from a conservative household feels empowered if she's allowed to go out alone without being escorted by a male from her house.

A transgender feels empowered when she's given employment.

The need for Social Empowerment-

Social empowerment leads one to take the right job and hence reduce the incidence of unemployment and under-employment.

Social empowerment leads to a decrease in social violence engineered against the deprived section of the society. If one is empowered socially, they know the rights they enjoy and the duties they serve.

Social empowerment is also advantageous in case of corruption as people tend to understand the exploitive class and restrain from giving any bribe which ultimately reduces corruption.

Social empowerment is one approach to reduce poverty. When people are empowered, they tend to use the knowledge in the right direction and somehow reduce their poverty which is so important for national growth also.

The main advantage of empowerment is that there will be an overall and inclusive development of the society. The money that people earn does not only help them and or their family, but it also helps develop the society.

Traits of socially empowered communities in India-

Communities like Jains, Parsis, Baniyas fair better in social indicators like health, education, nutrition, social status etc compared to other religious communities like Muslims and socially disadvantaged groups like Dalits.

They also have better economic opportunities and standard of living compared to other communities in India.

These communities have high nutrition levels compared to other religious communities in India.

Social empowerment has led to increased political opportunities as well. The Parsi community has been one of the most politically conscious communities which has made them aware of their rights and duties towards the state.

Political decisions like 73rd and 74th amendments have led to political empowerment of people at village and ward level. This directly empowered people socially as well. Many of the women have taken part in the grassroots democratic process and thus have become the agents of change themselves.

Reservation has become an important tool in the hands of government to allow marginalised sections like SCs, STs, women etc to take part in the governance system and allow equal opportunities for all sections of the society.

Other important traits of empowered communities are tolerance, Fraternity, brotherhood, sense of justice, incorruptible attitude and proper work ethic which make them to excel in all walks of life.

**Conclusion:**

Social empowerment is necessary to fulfil the constitutional obligations like providing equal opportunities for all the sections of the society in India and for that Education is one such powerful tool to break all odds faced by socially vulnerable people, and it is the best available tool to empower them. Needed measures must be taken to eliminate discrimination based on any factor, through the universalization of education. It is important to include sex education, a secular curriculum, and the art of intolerance through schools and university syllabus which not only bring awareness but also help to mobilize a large section of people to voice for the vulnerable section of the society to provide livelihood opportunities for those people identified as vulnerable. Because the present society demands people to be economically empowered to be socially empowered.

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**7. Do you think communalism feeds on India's highly polarised electoral politics?**

**Critically comment.**

**Approach**

The candidate needs to comment on the aspect of communalism feeding on India's highly polarised electoral politics and also giving counter arguments to it with proper substantiation.

### **Introduction**

Communalism, in a broad sense means a strong attachment to one's own community. In popular discourse in India, it is understood as unhealthy attachment to one's own religion. It has permeated into the electoral politics in India to a great extent in recent times.

### **Body**

India is pigeonholed by more ethnic and religious groups as compared to other countries of the world. Religion has great influence on political pattern in Indian society. Politicians use religion as their loopholes.

In India, Hinduism, Islam, Sikhism, Christianity, and Zoroastrianism are major religions practised by the people. Numerically, the Hindus have the majority. This initiates contestations that have often resulted in communal uprisings.

Religion in Indian politics can be linked to the country since pre-independence periods. It is supposed that the British, who ruled India for more than 100 years around the 19th century, pitched one community against the other to decline the freedom struggle.

Post-independence, the nation saw partition in the initial period, which led to widespread communal riots across the borders. Partition also left a permanent imprint on the national conscience and has been exploited by political parties till date.

The period till 1980's also saw multiple incidences of communalism, which were exploited by political parties. The Bangladeshi refugee's influx also led to growing polarisation in north east as well as eastern India, where a humanitarian tragedy was converted into a pitched religious issue.

It is evident from the above examples that communalism developed in society due to multitude of factors and has its effect on electoral politics but this situation changed in 1980's.

Shah Bano case and the subsequent events led to charges of minority appeasement, which transformed into full-fledged assertion of majority communalism which revived the dormant Ram Mandir Movement.

Here, electoral politics started the initiation of communalising tendencies in society instead of the earlier phenomenon. The Babri Masjid demolition not only encouraged communal violence in several parts of the country, in which many people died, but also separated people along religious lines. Consequently, the BJP emerged as a major party.

But at the same time, it is important to note that polarised electoral politics has multiple other factors, some of which are –

Caste politics in the last three decades have been marked by the desire for power on the caste-lines rather than a substantial agenda for social reform of the downtrodden.

Criminalisation of Politics: It refers to a situation in which the anti-social elements enter the electoral process by contesting elections, getting elected to the legislature, and consequently occupying public offices.

Further, Communalism is also prevalent due to many other factors, some of which are –

**Economic Causes** – Uneven development, class divisions, poverty and unemployment aggravates insecurity in the common men which make them vulnerable to political manipulation.

**Administrative Failure** – A weak law and order is one of the causes of communal violence.

**Psychological Factors** – The lack of inter-personal trust and mutual understanding between two communities often result in perception of threat, harassment, etc.

**Role of Media** – It is often accused of sensationalism and disseminates rumours as “news” which sometimes resulted into further tension and riots between two rival religious groups.

Social media has also emerged as a powerful medium to spread messages relating to communal tension or riot in any part of the country.

**Way Forward** –

Establishment of Peace committees that mediate in times of volatile situations.

Regulation of Media, especially social media so that rumours and fake news are not spread.

Check on Communal Agenda and politicization by way of strict implementation of law like on speeches during electioneering.

### **Conclusion**

It can be evaluated that in the Indian culture, religion has significant role. Therefore, Gandhiji’s preaching of brotherhood among the different religious groups needs to be revived and secular traditions, rooted in our cultural ethos must be propagated where separation of religion from politics needs to be emphasised and implemented across the length and breadth of the country.

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## **8. Do you think lack of development creates the breeding ground for regionalism?**

### **Substantiate.**

### **Approach**

Candidates are expected to write about regionalism and then substantiate how lack of development creates regionalism.

### **Introduction**

The roots of regional consciousness in India can be found in the colonial policies. Differential attitudes and treatment by the British towards princely states and those of the presidencies developed regionalist tendencies among them. British exploitative economic policies and later successive governments completely neglected some regions, giving way to economic disparities and regional imbalances.

### **Body**

**Regionalism:**

Regionalism is the expression of a common sense of identity and purpose by people within a specific geographical region, united by its unique language, culture, language, etc.

Regionalism has been interpreted as extreme loyalty or love to a particular region which may undermine the interest of the nation or the state of which the region is a part. There is always a natural tenancy towards the primacy of regionalistic over nationalistic.

Lack of development led to regionalism:

In the present times, uneven developments in different parts of the country can be construed as the prime reason for regionalism and separatism.

There are certain regions in the country where industries and factories have been concentrated, educational and health facilities are sufficiently provided, communication net work has been developed, rapid agricultural development has been made possible.

But there are also certain areas where the worth of independence is yet to be realized in terms of socio-economic development.

Of course, the British administration may be held responsible for causing such wide regional variations due to their suitability for the purpose of administration, trade and commerce.

It should be noted that roots of disparity in two regions was in colonial rule. Andhra was under direct rule of crown while Telangana was ruled by Nizam of Hyderabad, who was not so efficient ruler. So over time Andhra got more developed in comparison to Telangana.

But in the post-Independence era, efforts should have been made for regional balance in matters of industrial, agricultural and above all, economic development. This disparity has caused the feeling of relative deprivation among the inhabitants of economically neglected regions. It has manifested itself in the demand for separate states such as Bodoland or Jharkhand land, Uttarakhand, etc.

This is source of tension and gives birth to sub-regional movements for separate states. Jarkhand, Chattisgarh, Uttrakhand and recently Telangana are result of these failure only. Many such demands are in pipeline such as- Vidarbha, Saurashtra, Darjeeling and Bodoland, etc. These failures also weakens the confidence of private players and do not attract investors in the states.

One of the basic reason Assam agitations is because of the expansion of education, particularly higher education, but not industrialization and other job creating institutions is increasing the army of educated youths in the backward regions. The Bodo agitation is led by the Assam Bodo Students Union which is demanding a separate state and has resorted to wide scale violence and series of crippling bandhs to pursue their demand.

The existence of relative deprivation is one of the most important aspects in constructing the argument for regionalism. For example, Gorkha Nationalist Liberation Forum (GNLF) started its movement in the Darjeeling. In the view of GNLF, Darjeeling was the most underdeveloped region in comparison to the southern part of West Bengal.

These frustrated young men are allured by the movements of regionalism against the inflow of people from other countries and states. On the other hand these unemployed youths are also attracted by the caste, communal and other sectional agitations fighting for the protection of rights on sectarian lines.

Wayforward:

Formation of the NITI Aayog has been a positive step to enhance co-operative federalism by fostering the involvement of the State Governments of India in the economic policy-making process using a bottom-up approach.

Schemes like “Ek Bharat-Shreshtha Bharat” have been launched by the GOI to celebrate unity in diversity culture of the nation and to strengthen sentiment for National Unity between the citizens of states, is a welcomed step.

Introducing a system of national education through NEP that would help people to overcome regional feelings and develop an attachment towards the nation can act as a long-term solution to the problem of sub-nationalism.

### **Conclusion**

The need of the hour is to develop each region of India, through devolution of power to local governments and empowering people for their participation in decision-making. The governments need to find out the alternative source of employment for local people, use of technology in governance, planning and for agriculture development for Faster, sustainable and more inclusive growth.

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## **9. What are the recent debates surrounding the concept and practice of secularism in India? What are your views on the same?**

**Approach-** Candidate is expected to define Indian secularism and give a brief evolution while citing judgements of S.C. Underlining recent debates on secularism answer can be concluded by commenting on future of secularism in India.

### **Introduction**

The concept of secularism is multifaceted as well as flexible. The classical “Western” theories have emphasized on the “Wall of Separation” model of secularism. This model was best summarized by Donald Eugene Smith as encompassing three relationships between the individual and religion (freedom of religion), the state and the individual (citizenship) and the state and religion (separation of church and state).

### **Body**

Indian secularism

Indian Constitution guarantees to its citizens six fundamental rights, one of which is the right to freedom of religion. Article 25 of the Indian Constitution gives each citizen:

Freedom of Conscience

Right to Profess any religion

Right to Practice any religion

Right to Propagate any religion

Article 25 covers not only religious beliefs (doctrines) but also religious practices (rituals). Moreover, these rights are available to all persons—citizens as well as non-citizens. However, there are reasonable restrictions on the fundamental rights of the citizens and central government/state government, in time of need, can interfere with the religious affairs of the citizens.

There has been question mark on the status of India as a secular state. D.E. Smith held that India has a few features of secular state and not all. He held that there are three features of secular state

Freedom of religion

Universal citizenship and right to equality

Separation between religion and state.

In Indian context third feature is missing. So India is a secular state only in partial sense. In Indian context minorities are natural custodians of secular state, hence

nature of Indian state as secular state will depend in large extent on minorities. If they're organised and conscious about their rights, India will remain secular. But Indian secularism with western lens is unjustified as every country has its unique model. Indian secularism emerged as a response to Muslim League's demand for separate state for Muslims in the subcontinent. From this lens we can outline some of the prominent features of secularism

State is not identified with any particular religion, but it does not avert to use of religion.

No strict boundary rather porous boundary.

No active hostility towards religion, nor indifference

Different religions are in the foundation of state

There is no overarching idea.

Politically negotiated model.

In S. R. Bommai case, Supreme Court held that India has both positive and negative secularism. Positive secularism means state shall regulate religion by law and negative secularism means state will not patronise any religion.

S.C. also highlighted that religious tolerance and the idea of fraternity is the basic feature of Indian secularism.

Threats to Indian secularism

Misusing for Electoral benefits: Opportunistic distance (engagement or disengagement), mainly opportunistic alliance with religious communities, particularly for the sake of immediate electoral benefit

Neglecting the Core Idea of Indian Secularism: Political parties have bizarrely interpreted 'respect' to mean cutting deals with aggressive or orthodox sections of religious groups at times igniting communal violence.

Victimization of Communities: Principled intervention by State in one religion is viewed as discriminatory treatment by fringe sections of society leading to

Politicisation of Secularism

Politicisation of any one religious group leads to the competitive politicisation of other groups, thereby resulting in inter-religious conflict.

Requires Continuous Civic Participation: India's constitutional secularism cannot be sustained by governments alone but requires collective commitment from an impartial judiciary, a scrupulous media, civil society activists, and an alert citizenry.

Way ahead

In Sabrimala case verdict S.C. gave decision in favour of women entering temple, but this has triggered larger issue of what exactly is principled distance means in context of Indian secularism.

Views of Justice Indu Malhotra and constitution of larger bench to decide on the same is indicative of new emerging debate in India on secularism.

### **Conclusion**

Indian secularism is not an end in itself but a means to address religious plurality and sought to achieve peaceful coexistence of different religions. There is need to shift focus from a politically-led Secularism project to a socially-driven movement for justice.

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### **10. What factors can be attributed for the failure in containing the spread of COVID-19? What measures would you suggest to curb the surge?**

#### **Approach**

Mention the factors attributed for the failure in containing the spread of COVID-19. Also mention measures to curb the surge.

**Introduction**

Amid the COVID-19, the system that has been developed to provide a global response to epidemics and pandemics failed miserably. Covid-19 spread all over the world, shutting down entire countries. Governments, and even subnational governments competed fiercely for scarce medical stocks and critical supply chains disrupted due to governmental export restrictions.

**Body**

Factors attributing for the failure in containing the spread of COVID-19

The WHO was simply not fit for this purpose. This stems from its subservience to major funding states, which dates back to the 1970s.

Today, the WHO's total annual budget is around \$5.6 billion. By comparison, the Australian federal health budget for 2019–20 was \$120 billion, and even bigger if the states' budget is included.

Unsurprisingly, this has had the effect of limiting the WHO's capacity, as well as making it highly responsive to its main funding states, thus jeopardizing its independence.

A second important aspect of global health governance pre-Covid-19 was its operation through domestic state institutions. The underlying assumption was that infectious diseases are likely to emerge in developing countries, due to their poor sanitation and governance capacities, then spread to other parts of the world. Although very limited financial support was available to help developing countries build up their domestic health systems, they were subjected to ongoing surveillance by the WHO and developed countries.

When disease outbreaks occurred, developed countries provided funding and intervened temporarily to address the immediate problem. This funding would eventually dry out as the outbreak was deemed to have been brought under control. Other than such intermittent interventions, which did little to build up primary health capacity in their recipient states, countries were largely supposed to use their own resources towards pandemic preparedness. Thus, very limited collective capacities had emerged, even within the European Union.

These factors combined to create a spectacular global health governance failure after the emergence of Covid-19.

Measures to curb the surge

Broad lockdown is the simplest, most blunt tool to break the chain of transmission, which reduces the probability of people getting infected and lightens the load on the health care system.

Mask mandates is another measure to curb the surge of the COVID virus.

We should certainly shut down restaurants and bars first before anything else. Also curfews and limiting the gathering will keep a check on the surge too.

**Conclusion**

While these measures work short term, if they aren't implemented for a long enough time to truly decrease transmission, once they are relaxed there will be a rebound of cases. With the virus spreading at record speed, it's still far from clear that even data-driven, tailored approaches will work, given the enormous reach of



the virus and the coming holiday travel season. Ultimately it's like there's a fire raging, but you're only able to douse the spot fires and wait for help.

**11. Discuss the unique flora and fauna of Australia. What are the geographical factors that impart this uniqueness?**

**Approach:**

Question is straight forward in its approach students are expected to discuss the unique geographical features of Australia and how it impacts the distribution of flora and fauna of the country cum continent.

**Introduction:**

Australia's geographic isolation has meant that much of its flora and fauna is very different from species in other parts of the world. Most are found nowhere else. However, some closely related species are found on the continents which once made up the ancient southern supercontinent Gondwana. Covered in rainforest and ferns 300 million years ago, Gondwana included South America, Africa, India and Antarctica. Most of Australia's flora and fauna have their origins in Gondwana, which broke up about 140 million years ago.

Australia separated from Antarctica 50 million years ago. As it drifted away from the southern polar region, its climate became warmer and drier and new species of plants and animals evolved and came to dominate the landscape.

**Body:**

**Flora**

Australia has a huge diversity of plants (27 700 plant species according to the last studies), due to the fact that the country is huge and the climate is different from one region to another. From the rainforests of the North Queensland to the dry vegetation of the Red Centre, from the temperate plains of the NSW to the forests of Tasmania, diversity seems to have no limit.

Even in the most arid parts of the country, sudden rainfalls can turn a desperate landscape into a field of wildflowers. Among Australia's thousands of plant species, some are more emblematic than others. One of the best known Australian tree is the Eucalyptus. More than 2 500 species of Eucalyptus are represented in Australia! On warm days, eucalyptus forests are sometimes shrouded in a smog-like haze.

The Blue Mountains, 70kms west of Sydney, take their name from this haze.

Australia also has around 1 000 species of acacia, that they call "wattles.

Located in North Queensland, this forest is the oldest tropical rainforest on earth, dating back 135 million years! Since 2015, most of the forest is listed as a UNESCO world natural site. The Kakadu National Park and its wetlands (also called billabongs) are another must-do for nature lovers. The Kakadu is not only Australia's largest National Park, it is also a UNESCO world natural and heritage site.

The fauna of Australia consists of a huge variety of animals. Did you know that more than 80% of mammals, nearly 90% of reptiles and more than 90% of amphibians that inhabit the continent are endemic to Australia? Mammals:

**Marsupials:** They are certainly the most famous Australian animals! A distinctive characteristic is that most of the young are carried in a pouch. That is of course the case of kangaroos. There are in fact many species of kangaroos: Eastern grey kangaroos, Red kangaroos, Western grey kangaroos, Tree kangaroos... You might also see wallabies, which are smaller than kangaroos, and wallaroos, which are even smaller! Another emblematic species of marsupials is koalas.

**Monotremes:** They are probably the most exotic animals of Australia, a transitory group between mammals and reptiles! You have certainly heard about the platypus, this crazy mammal with a duck beak. They are the only mammal that lay eggs instead of giving birth! The platypus is the animal emblem of the state of New South Wales.

**Placentals:** As stated before, there are only a few native placental mammals in Australia. Dingoes are one of them. For many Australians, the dingo is a cultural icon. They play a prominent role in the Aboriginal culture. Dingoes are the largest terrestrial predator in Australia. They play an important role as an apex predator. However, they are seen as a pest by farmers, due to attacks on animals.

**Reptils and Batracians:** Australia is home to 140 species of snakes. Uniquely, Australia has more venomous than non-venomous species of snakes! The most dangerous are the inland taipan, the tiger snake and the common death adder. Fortunately, the snakes are shy animals that flee contact with humans. Casualties are therefore really rare.

**Crocodiles:** Saltwater crocodiles can be found along the Northern coast of Australia. They are the largest of all living reptiles. Males can reach sizes up to 6.30m! The saltwater crocodiles are carnivorous predators, that are dangerous for humans. Signs have been displayed to inform people that crocodiles live around, but do not hesitate to ask locals for more details. Freshwater crocodiles are much smaller (2-3 meters) and are not known as man-eaters. However, they might bite if you disturb them.

**Fish and marine animals:** About 25% of the world's species of fish can be found in the Australian waters. The Great Barrier Reef is listed as a UNESCO world natural site since 1981. Australia is home to 1700 species of corals, and is therefore a paradise for divers and snorkelers! Those that want to watch whales will also find happiness in Australia. Humpback whales are the most common species.

**Birds:** There are over 800 species of birds in Australia. Half of them are endemic. The best spots to watch them are the Broome Bird Observatory and the Kakadu National Park. Some species are really unusual. The emus, the second-largest living bird by height, are able to run as fast as horses... but cannot fly!

**Unique Geographical Features of Australia**

Australia is a relatively low-lying island with low relief. It is the flattest of all the continents. The various highland ranges are pronounced, but are not high in elevation. The Great Dividing Range is a mountain chain extending from Melbourne in the south to Cape York in the north. This low-lying range of highlands averages about four thousand feet and reaches an elevation of just over seven thousand feet at its highest peaks in the south. The largest river in Australia is the Darling-Murray River system that starts in the highland of the Great Dividing Range and flows inward through New South Wales, Queensland, Victoria, and South Australia.

The great interior of the country is home to the massive outback. Extending west from the Great Dividing Range, the outback encompasses most of the interior. This

region receives less rainfall than along the coast and its terrain consists of deserts and semiarid plateaus with rough grasses and scrublands. The outback is sparsely populated, but is home to a number of aboriginal groups. Many of the school-age children in the outback have traditionally received their school lessons through television or radio broadcasts because of their isolation. Mining and some agricultural activities can be found in the outback. Alice Springs is located in the center of the continent and has been given the designation of the middle of nowhere, or the center of everything.

The deserts of Australia's interior make up a large portion of the continent. Western Australia has three large deserts: the Gibson Desert, Great Victoria Desert, and Great Sandy Desert. The Simpson Desert is located in the border region between the Northern Territory, Queensland, and South Australia. These deserts are not all sand; coarse grasses and various species of spinifex, a short plant that grows in sandy soil, also grow in the deserts. The Great Artesian Basin on the western edge of the Great Dividing Range receives very little rainfall. It would be classified as a desert but for its underground water resources, which support extensive farming operations. Large livestock businesses exist in Australia's interior with massive herds of cattle and sheep. The grassy plateaus and scrublands provide grazing for domesticated livestock and even wild camels. The Great Barrier Reef, the largest barrier reef in the world, extends for 1,600 miles off the northeastern coast of Australia. It is home to a host of sea creatures and fish that draw millions of tourists each year.

**Conclusion:**

Australia is both the flattest continent and, except for Antarctica, the driest. Seen from the air, its vast plains, sometimes the colour of dried blood, more often tawny like a lion's skin, may seem to be one huge desert. One can fly the roughly 2,000 miles (3,200 km) to Sydney from Darwin in the north or to Sydney from Perth in the west without seeing a town or anything but the most scattered and minute signs of human habitation for vast stretches. A good deal of the central depression and western plateau is indeed desert. Yet appearances can be deceptive. The red and black soil plains of Queensland and New South Wales have long supported the world's greatest wool industry, and some of the most arid and forbidding areas of Australia conceal great mineral wealth.

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**12. What is an air mass? With the help of suitable examples, illustrate the impact of air mass on weather conditions.****Approach**

The candidate needs to explain what is an air mass in the first part of the answer and then elaborate upon the impact of air mass on weather conditions, with the help of proper examples for substantiation.

**Introduction**

An air mass is a large volume of air in the atmosphere that is mostly uniform in temperature and moisture. Air masses can extend thousands of kilometres across the surface of the Earth, and can reach from ground level to the stratosphere into the atmosphere.

**Body**

Air masses form over large surfaces with uniform temperatures and humidity, called source regions. When winds move air masses, they carry their weather conditions

from the source region to a new region. When the air mass reaches a new region, it might clash with another air mass that has a different temperature and humidity. This can create a severe storm.

The warm air masses form over the equator or desert areas where the solar radiation is maximum. In clear, almost cloudless days, the heat is reflected back to the atmosphere. The air becomes light and spreads.

Cold air masses form near the poles where solar radiation is at a minimum. On cloudless days, the snow cover near the Poles, reflect sunlight away, preventing the earth to warm up. When this persists for a long period of time, cold air masses form over a large area.

Impact of Air mass on weather conditions –

In a particular area, the occurrence of particular air masses helps to ascertain the climate of that region. This in turn decides the type of flora and fauna as well as the type of crops that can be grown. For instance –

Precipitation: E.g. the maritime-tropical air over Atlantic Ocean, Caribbean Sea is a major reason for precipitation east of Rocky Mountains. It is also the cause of persistent humidity in the summer season.

Temperature: Maritime polar air affects the coastal temperature in subtropical and arctic regions.

Cyclones and anti-cyclones: Stormy cyclones form near the air-mass fronts. The mixing of air masses will result in rising air feeding the cyclone formations in the subtropical cyclone. Similarly, the warm maritime tropical air mass will provide the energy for tropical cyclones.

Drought: they are the result of hot, dry air mass. This can destroy natural vegetation and kill trees. These regions have the increase risk of devastating wildfires. E.g. California wild fires.

At the boundaries between air masses, the clash of masses of air with different characteristics can lead to dynamic weather like hail, tornadoes, high winds or ice storms. E.g. tropical cyclones formed in East China Sea.

Air masses can control the weather for a relatively long time period: from a period of days, to months. Most weather occurs along the periphery of these air masses at boundaries called fronts.

### **Conclusion**

Air masses spread across massive region, extending up to hundreds of kilometres and they exercise a considerable influence on the climatic conditions of the region over which they lodge and carry with them distinctive climatic features of their source region. This demonstrates their importance and the need to understand the phenomenon in a more holistic way.

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## **13. Discuss the formation of ocean currents and their impact on coastal climate.**

### **Approach**

Candidates are expected to write about ocean currents and then discuss how their formation impact the coastal climate.

### **Introduction**

The term “current” describes the motion of the ocean. Ocean currents are driven by wind, water density differences, and tides. Oceanic currents describe the movement of water from one location to another.

**Body**

Formation of ocean currents due to:

**Salinity:** Waters of low salinity have lower density enabling them to flow on the surface of waters of high salinity while waters of high salinity flow at the bottom.

**Landmass:** A land mass obstructs the direction of flow of ocean current and divides the ocean current to flow in a different direction.

**Influence of insolation:** Heating by solar energy causes the water to expand. That is why, near the equator the ocean water is about 8 cm higher in level than in the middle latitudes. This causes a very slight gradient and water tends to flow down the slope. The flow is normally from east to west.

**Influence of gravity:** Gravity tends to pull the water down to pile and create gradient variation.

**Influence of Coriolis force:** The Coriolis force intervenes and causes the water to move to the right in the northern hemisphere and to the left in the southern hemisphere. These large accumulations of water and the flow around them are called Gyres. These produce large circular currents in all the ocean basins. One such circular current is the Sargasso Sea.

**Planetary winds:** The planetary winds are permanent winds Trade winds, Westerlies and Polar Easterlies that blow from one pressure belt to the other. The oceanic circulation pattern roughly corresponds to the earth's atmospheric circulation pattern. There is a change in the direction of ocean currents with a change in direction of the monsoon winds in the Indian Ocean.

Currents affect the Earth's climate by driving warm water from the Equator and cold water from the poles around the Earth. It has various impact on the coastal climate:

**Desert formation:** Cold ocean currents have a direct effect on desert formation in west coast regions of the tropical and subtropical continents. There is fog and most of the areas are arid due to desiccating effect (loss of moisture).

**Rains:** Warm ocean currents bring rain to coastal areas and even interiors. Example: Summer Rainfall in British Type climate. Warm currents flow parallel to the east coasts of the continents in tropical and subtropical latitudes. This results in warm and rainy climates. These areas lie in the western margins of the subtropical anti-cyclones.

**Moderating effect:** They are responsible for moderate temperatures at coasts. North Atlantic Drift brings warmth to England. Canary cold current brings cooling effect to Spain, Portugal etc.

**Drizzle:** Mixing of cold and warm ocean currents create foggy weather where precipitation occurs in the form of drizzle [Newfoundland].

**Climate:** Results in Warm and rainy climates in tropical and subtropical latitudes [Florida, Natal etc.], Cold and dry climates on the western margins in the sub-tropics due to desiccating effect, Foggy weather and drizzle in the mixing zones, Moderate climate along the western coasts in the sub-tropics.

**Tropical cyclones:** They pile up warm waters in tropics and this warm water is the major force behind tropical cyclones.

**Navigation:** Currents are referred to by their "drift". Usually, the currents are strongest near the surface and may attain speeds over five knots (1 knot = ~1.8 km). [At depths, currents are generally slow with speeds less than 0.5 knots]. Ships usually follow routes which are aided by ocean currents and winds. Example: If a ship wants

to travel from Mexico to Philippines, it can use the route along the North Equatorial Drift which flows from east to west.

Fishing: Mixing of cold and warm ocean currents bear richest fishing grounds in the world. Example: Grand Banks around Newfoundland, Canada and North-Eastern Coast of Japan. The mixing of warm and cold currents help to replenish the oxygen and favor the growth of planktons, the primary food for fish population. The best fishing grounds of the world exist mainly in these mixing zones.

#### **Conclusion**

Ocean currents and mixing by winds and waves can transport and redistribute heat to deeper ocean layers. Ocean currents acts to neutralise the temperature difference between different areas in the oceans just like the winds do on land. Currents are also important in marine ecosystems because they redistribute water, heat, nutrients, and oxygen about the ocean.

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#### **14. How does geomorphology of a region shape the economy? Illustrate.**

**Approach-** Question is straight forward. Candidate is expected to define geomorphology and explain how it shapes economy of a particular region with the help of suitable examples.

#### **Introduction**

Geomorphology is the study of landforms, their processes, form and sediments at the surface of the Earth (and sometimes on other planets). Study includes looking at landscapes to work out how the earth surface processes, such as air, water and ice, can mould the landscape. The different climatic environments produce different suites of landforms. The landforms of deserts, such as sand dunes and ergs, are a world apart from the glacial and periglacial features found in polar and sub-polar regions.

#### **Body**

How geomorphology shapes economy of the region?

**Minerals:** Areas with mineral deposits attract industries. Mining and industrial activities generate employment. So, skilled and semi-skilled workers move to these areas and make them densely populated. Katanga Zambia copper belt in Africa is one such good example.

**Landforms:** People prefer living on flat plains and gentle slopes. This is because such areas are favourable for the production of crops and to build roads and industries. The mountainous and hilly areas hinder the development of transport network and hence initially do not favour agricultural and industrial development. So, these areas tend to be less populated. The Ganga plains are among the most densely populated areas of the world while the mountains zones in the Himalayas are scarcely populated.

**Soils:** Fertile soils are important for agricultural and allied activities. Therefore, areas which have fertile loamy soils have more people living on them as these can support intensive agriculture.

**Availability of water:** It is the most important factor for life. So, people prefer to live in areas where fresh water is easily available. Water is used for drinking, bathing and cooking – and also for cattle, crops, industries and navigation. It is because of this that river valleys are among the most densely populated areas of the world.

Geomorphological factors influence industrial activities. Industrialisation: Industrial belts provide job opportunities and attract large numbers of people. These include not just factory workers but also transport operators, shopkeepers, bank employees, doctors, teachers and other service providers. The Kobe-Osaka region of Japan is thickly populated because of the presence of a number of industries.

Urbanisation: Cities offer better employment opportunities, educational and medical facilities, better means of transport and communication. Good civic amenities and the attraction of city life draw people to the cities. It leads to rural to urban migration and cities grow in size. Mega cities of the world continue to attract large number of migrants every year.

Transport and communication-Demand for transport is influenced by the size of population. The larger the population size, the greater is the demand for transport. Routes depend on: location of cities, towns, villages, industrial centres and raw materials, pattern of trade between them, nature of the landscape between them, type of climate, and funds available for overcoming obstacles along the length of the route.

### **Conclusion**

Geomorphological factors play central role in determining the sort of economic activities that will play out in the region. These factors determine the location of particular industry, raw material for production and place of marketing. Economy revolves around these factors and shape economy in the long run.

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## **15. How are coral reefs formed? Discuss. What are the most potent threats to coral reefs?**

### **Approach**

Discuss necessitates a debate where reasoning is backed up with evidence to make a case for and against an argument and finally arriving at a conclusion. So discuss the formation of coral reefs and then mention the most potent threats to them.

### **Introduction**

A coral reef is an underwater ecosystem characterized by reef-building corals. Reefs are formed of colonies of coral polyps held together by calcium carbonate.

### **Body**

How are the coral reefs formed:

Coral reefs begin to form when free-swimming coral larvae attach to submerged rocks or other hard surfaces along the edges of islands or continents. As the corals grow and expand, reefs take on one of three major characteristic structures — fringing, barrier or atoll.

Classic coral reef formation change through time. They begin with a brand new tropical island (produced by an oceanic hot spot or at a plate boundary) and gradually change through thousands of years from a fringing reef, to a barrier reef, to an atoll, and finally to an extinct reef as a seamount or guyot.

A fringing reef forms along the shoreline of most new tropical islands. This is because the reef building coral animal is one of the few marine organisms that can survive in the warm, nutrient-poor surface tropical waters.

A barrier reef forms as the oceanic island begins to sink into Earth's crust due to the absence of volcanic island building forces, the added weight of the coral reef, and erosion at the surface of the island.

An Atoll forms when the oceanic island sinks below the surface of the ocean but the coral reef continues to grow upward.

The most potent threats to coral reefs

Coral reefs face numerous threats. Weather-related damage to reefs occurs frequently. Large and powerful waves from hurricanes and cyclones can break apart or flatten large coral heads, scattering their fragments.

Reefs also are threatened by tidal emersions. Long periods of exceptionally low tides leave shallow water coral heads exposed, damaging reefs.

The amount of damage depends on the time of day and the weather conditions.

Corals exposed during daylight hours are subjected to the most ultraviolet radiation, which can overheat and dry out the coral's tissues.

Corals may become so physiologically stressed that they begin to expel their symbiotic zooxanthelle.

Increased sea surface temperatures, decreased sea level and increased salinity from altered rainfall can all result from weather patterns such as El Niño. Together these conditions can have devastating effects on a coral's physiology.

In addition to weather, corals are vulnerable to predation. Fish, marine worms, barnacles, crabs, snails and sea stars all prey on the soft inner tissues of coral polyps. In extreme cases, entire reefs can be devastated if predator populations become too high.

### **Conclusion**

Coral reefs may recover from periodic traumas caused by weather or other natural occurrences. If, however, corals are subjected to numerous and sustained stresses including those imposed by people, the strain may be too much for them to endure, and they will perish. Although corals can survive a bleaching event, they will eventually die if they are under repeated stress. Outbreaks of coral disease typically follow bleaching events since stressed corals are more susceptible to infection.

## **16. Discuss the locational factors for the pharmaceutical industry. Examine the challenges posed to the pharmaceutical sector during the COVID pandemic.**

### **Approach**

Candidates are expected to write about location factors related to pharmaceutical industry explain with Indian examples. Also examine the challenges posed to the pharmaceutical sector during COVID pandemic.

### **Introduction**

India is the largest provider of generic drugs globally. Indian pharmaceutical sector supplies over 50% of global demand for various vaccines, 40% of generic demand in the US and 25% of all medicine in the UK. India enjoys an important position in the global pharmaceuticals sector.

### **Body**

Pharmaceutical industry: The pharmaceutical industry discovers, develops, produces, and markets drugs or pharmaceutical drugs for use as medications to be administered (or self-administered) to patients, with the aim to cure them, vaccinate them, or alleviate the symptoms. Location factors for the pharmaceutical industry –

Supply of labour: Labour is one of the most important inputs in any industrial enterprise. India has a regular and cheap supply of labour, specifically the skilled



labour. Also, as there is adequate supply of local labour/unskilled labour, then naturally it will be available at cheaper rates.

Suitability of land and climate: Climatic conditions viz humidity, temperature and other atmospheric conditions are favourable for the pharma industry. For example, humid atmosphere is not suitable for the formation of pharmaceuticals.

Stable growth in domestic market consumption: Despite recent headwinds, the Pharmaceutical industry in India has grown rapidly. India is likely to become one of the top 3 Pharmaceutical industries by 2030.

Large pool of scientists and engineers with a potential to steer the industry ahead to greater heights. Presently, over 80% of the antiretroviral drugs used globally to combat AIDS (Acquired Immune Deficiency Syndrome) are supplied by Indian pharmaceutical firms.

And within India, if there is one destination that all of them are making a beeline for it is Hyderabad. The city has the capacity to churn out well over a third of the global vaccine supply. Be it India's first indigenous Covid-19 vaccine candidate Covaxin or Russia's Sputnik V, Johnson & Johnson's Ad26. Cov2.S, FluGen's CoroFlu or even Sanofi's under development vaccine candidates, all have a Hyderabad connect. Whether a successful Covid-19 vaccine is developed in India or not, a vaccine developed anywhere in the world will be churned out of Hyderabad and Pune. The city-based pharma companies are actively involved in manufacturing lifesaving Covid-19 drugs including Remdesivir, Hydroxychloroquine, Favipiravir, etc Three more pharma companies from Hyderabad are actively engaged in the efforts to develop and manufacture Covid-19 vaccine.

One of the first ICMR approved RT-PCR kits in India was from Hyderabad and Pune since then, a number of companies have developed PCR kits, rapid test kits, viral transport mediums, reagents, tech-based diagnostics solutions etc.

There is no doubt that Hyderabad and Pune has played a critical role in the Indian pharmaceutical revolution which made the country not only self-sufficient in the medicine manufacture but also made it as the pharmacy capital of the world.

Challenges to the pharmaceutical industry in COVID pandemic –

Disrupted Supply Chain: Over the globe, supply chains have been broken, disrupted, and some have even come to a grinding halt because of the nation-wide lockdowns, closed borders, and halted air travel.

Need for Agility and Transparency: With the Covid-19 pandemic, there has been immense interest in the Pharma sector's workings by almost all social hierarchies. There is an increased need for faster, accurate, and transparent operations across the board.

Workforce optimisation and Controls: During COVID-19, Pharma manufacturing companies made many adjustments to modus operandi. That includes accommodating remote workforce, social distancing when in person, wearing masks and gloves, and avoiding any possibility of spreading the coronavirus.

Humongous Data Collation and Analysis: The research and clinical trials for potential drug treatments and vaccines for coronavirus worldwide generate unprecedented amounts of data and information. Paramedical experts and scientists in the Pharma industry look at agile tools to collate and manage data while generating insights.

### **Conclusion**

While these changes and concerns are bound to affect the pharmaceutical industry's workings, proper management, technology, and software to navigate these challenging times will enable the pharmaceutical sector to rise to the occasion. The Covid-19 pandemic has brought forward existing and new challenges for the Pharma sector. However, it has given a chance to create opportunities and get transformations that can have a positive impact on the pharmaceutical industry.

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**17. Discuss the challenges being faced by India's civil aviation sector. What measures have been taken recently to address those? Discuss.**

**Approach**

Candidate can give brief facts about aviation industry and its potential in the introduction and state challenges faced by the sector. With the help of new government schemes and initiatives, way ahead can be given.

**Introduction**

The civil aviation industry in India has emerged as one of the fastest growing industries in the country during the last three years. India has become the third largest domestic aviation market in the world and is expected to overtake UK to become the third largest air passenger market by 2024.

**Body**

Size of Indian aviation industry –

India had the world's third-largest civil aviation market in 2017, with the number of passengers growing at an average annual rate of 16.3% between 2000 and 2015. It recorded an air traffic of 131 million passengers in 2016. Despite this growth, much of the country's aviation potential remains untapped.

The Ministry of Civil Aviation is responsible for civilian aviation, through regulatory oversight by the Directorate General of Civil Aviation (DGCA).

Challenges faced by the sector –

Paramount amongst all issues is the one of air safety. In the past few years, there have been a number of fatal accidents snuffing out hundreds of innocent lives. Many of these accidents could have been avoided if as the planners, managers and regulators had a better understanding of the dynamics of the man-machine interface.

The airspace in India is going to see an increase in the number of aircraft flying. Hence, flying operations, air space management, arrivals and departures at airports, must be made more efficient for safe operations.

The next most important issue is one of finance. We at times are hesitant to acknowledge that financial viability is essential for all concerned. Once this is accepted, optimisation of resources will become the normal way of life, as would competence and efficiency.

Aviation turbine fuel (ATF) is one of the important sections of the industry. Indian government didn't not reduce the jet fuel prices in proportion to the fall in international crude oil prices. But, when there is a rise in crude prices, it increases in the fuel cost would eventually increase the operation of the airline.

Frequent government intervention is proving to a great obstacle for the growth of Aviation industry. Several aviation experts have pointed out that India government should follows aviation industry free from policy hurdles like regulating airfares and slash taxes, including jet fuel.

High Airport (aeronautical) Charges levied by Airport Authority of India are higher. These charges payable at the International airports are higher than those payable at the airports designated as Domestic airports. As a result, the domestic airlines in India are incurring additional costs at the international designated airports without deriving any extra facilities.

There is a cut throat competition faced by the top airline due to ticket pricing. Established Airlines are threatened by low cost carriers, which are eating up their market share.

Measures taken to address these issues –

There is a need to complete the ongoing projects under the UDAN initiative in a time-bound manner. In addition, the existing capacity of international airports should be augmented under the International UDAN initiative.

Government intention to make India a global hub for Aircraft Maintenance, Repair and Overhaul (MRO) services will result in saving costs and creating liquidity for airline companies.

National Civil Aviation Policy 2016 and National Civil Aviation programme 2018 can help India to become a major civil aviation market in the world.

The development of more airports under the PPP model with a view to improving the aviation infrastructure without the government having to pump in additional funds.

With 100% FDI allowed under automatic route, aviation sector is likely to witness US\$15 billion worth of investment in the next five years.

New airports like Jewar Airport in Uttar Pradesh are being built under the NABH Nirman initiative based on (1) fair and equitable land acquisition, (2) long-term master plan for airport and regional development and (3) balanced economics for all stakeholders. This leads to growth in housing and real estate sector, construction, building materials, tourism, etc.

With a new terms and conditions to divest Air India, government is trying to give positive signal making level playing field for small players.

### **Conclusion**

Pandemic brought the aviation sector worldwide to a standstill. Industry witnessed many big players filing for bankruptcy after hitting a blow. Indian aviation sector is still booming and is expected to be third largest in the world by 2024. India needs relaxation in some harsh regulatory measures and liberalisation policy for exit of an airline. With more private sector investment, tier II and tier III cities will also see new infrastructure development as envisaged in civil aviation policy of 2016.

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### **18. Why do certain pockets in South India have high concentration of the automobile and ancillary industries? Examine.**

#### **Approach**

Since the question is asking you to examine so you have to probe deeper into the topic and understand the topic in detail.

#### **Introduction**

Auto and its ancillary industry is one of the key sectors in the Indian economy. The auto industry can be broadly divided in four sub sectors: (a) Four Wheelers (4W) (b) Two wheelers or 2Ws (c) Commercial vehicles and (d) Three wheelers (3W). The Automobile Industry, due to its very nature, has grown in clusters.

**Body**

WHY CERTAIN POCKETS IN SOUTH INDIA HAVE HIGH CONCENTRATION OF THE AUTOMOBILE AND ANCILLARY INDUSTRIES: Out of the registered Original Equipment Manufacturer (OEMs) many are located in the southern states of the country. Almost one third of the concentration of the auto industries in India is in the four Southern states only.

The certain pockets in South India have high concentration of the automobile and ancillary industries due to following reasons –

The well-developed port facilities in the Tamil Nadu State encourage the industries to tap the export markets.

The key raw material—rubber—can be sourced from Kerala and Kanyakumari or imported.

These places offer transparency and good governance for automotive companies, such as during recalls on certain vehicles, etc.

Availability of reliable and reasonably priced utilities in these areas is another reason.

These southern state's Site access confirm acceptable ingress and egress for employees, inbound raw materials and outbound finished product.

These southern pockets offer Size, shape, topography and room for future expansion.

These sites act as buffer that provide protection from residential and commercial neighbours.

Presence of Industrial parks often provide good locations for multiple users with similar buffer and utility requirements.

**Conclusion**

The automobile industry is supported by various factors such as availability of skilled labour at low cost, robust R&D centres, and low-cost steel production. The auto industry was already facing financial headwinds before the pandemic, and the impact of COVID-19 has only accelerated many of those concerns. In the short-term, the automotive companies like those in other industries fear the unforeseen effects of the second wave of COVID-19. The industry will require more government help in the form of reforms and incentives.

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**19. With the help of suitable examples, discuss the evolving global trends for the location of tertiary sector?****Approach**

Question is straight forward in its approach students are expected to write about evolving global trends for the location of tertiary sector with suitable examples.

**Introduction**

Industrial locations are complex in nature. These are influenced by the availability of many factors. Some of them are: raw material, land, water, labour, capital, power, transport, and market. Tertiary sector refers to the commercial services that support the production and distribution process, e.g. insurance, transport, advertising, warehousing and other services such as teaching and health care. The chain of production shows interdependence: firms rely on other businesses in different sectors for raw materials, components or distribution.

**Body**

Evolving trends for the location of tertiary sector –

Tertiary sector was mainly focussed on Information technology and other services industries like transportation etc. location of the same industries was mainly based on availability of cheap and skilled labour through business process outsourcing e.g. in India Information Technology reached to its peak through the process of business outsourcing.

Outsourcing has witnessed a massive boom over the past few decades, with the number of service providing companies increasing every year. The year 2018 is going to be no different when it comes to keeping up with this exponential growth in the outsourcing trend. IT outsourcing trends, this year, have seen a constant growth and this trend will continue to grow in the coming years.

Technological advancement will become a main factor in the location of tertiary sector in coming times. Robotic process automation and intelligent automation will continue to flourish in the coming years. This is expected to disrupt the existing commercial outsourcing model and drive down costs considerably, resulting in supplier margin expansion. Furthermore, enterprise buyers will also have opportunities to save more, as the supplier margins expand.

With the use of self-service tools and automated chat-bots becoming highly prevalent among many companies, the demand for call centers is expected to decrease drastically. As virtual agents can work on numerous clients at the same time, these automated contact centers will be able to handle higher volumes with less number of agents. Therefore, we will see various tech-enabled contact centers replacing the traditional call centers, few years down the line.

Companies are expected to look out for service providers who add value to their business rather than those who just provide services at lower costs. Therefore, outsourcing companies will partner with service providers who offer innovative services, equipped with best infrastructure and thorough industry knowledge. This will become a disrupting factor in the already existing pattern of location of tertiary sector.

With covid-19 pandemic making a broad based change Telecommuting is one trend which has changed the way outsourcing companies operate over the years and this trend is here to stay. Companies find it very easy to interact with other team members and integrate seamlessly through remote meetings and use different types of real-time monitoring tools to deliver quality services.

Analysts are predicting that the industry will continue to fight short-term cost pressures, and that there will be pressure on service providers for more flexible pricing contracts. Many small alliances, focused on increased operational efficiencies, better quality control and reduced back office costs, are being set up. This trend is going to continue.

Brazil and Russia will make their presence felt in the global outsourcing market and China will continue to move ahead.

### **Conclusion**

India continues to be the major destination for outsourcing because it has been able to evolve with changing needs. NASSCOM, (National Association of Software & Service Companies) the apex body of India's premier IT software and service (IT & BPO) companies, reported that India's share in the global outsourcing market rose from 51% in 2009 to 55% in 2010. India still stands out for its customer service and

efficiency, so its future is bright. Today, customers are not only looking at cost-effective solutions for their outsourced business but also for skilled staff, enhanced productivity, service quality and business process excellence. India, with its large population and multiple-skilled people, would continue to be preferred for both back-end and front-end outsourcing.

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**20. Discuss the factors responsible for the location of agribusinesses. Why is the agribusiness sector underdeveloped in India?**

**Approach**

The candidate needs to address the question in two parts where the first part discusses the factors responsible for the location of agribusinesses while in the second part, the reasons for agribusiness sector's underdevelopment in India are elaborated upon.

**Introduction**

Agribusiness is a combination of the words "agriculture" and "business" and refers to any business related to farming and farming-related commercial activities where agribusiness involves all the steps required to send an agricultural good to market, namely production, processing, and distribution.

**Body**

Agribusiness involves all the steps required to send an agricultural good to market, namely production, processing, and distribution. This industry is an important component of the economy in countries with arable land since agricultural products can be exported. In this regard, the factors responsible for the location of agribusinesses include –

**Raw Materials:** The moisture requirements of the plant vary according to the heat received, rich soil in plant food is the chief requirement of successful agriculture, and topography affects agriculture as it relates to soil erosion, difficulty of tillage and poor transportation facilities.

**Market:** Relation to market generally determines the character of agribusiness, for the cost of transport to the market will generally affect the competitive power of the agribusiness output. Places away from the market will generally grow such things which can afford cost of transport to market.

**Labour:** Labour supply determines the character of agribusiness. Agribusiness is essentially labour-intensive and exemplifies the human pressure.

**Capital:** The modern mechanised agribusiness has become capital-intensive to a large extent. The entrepreneur has to invest large amount of capital in agriculture because he has to buy machinery.

**Social Factors:** Social factors affect farming in a number of ways. The type of agribusiness practiced is always related to regional social structure. Social factors can also affect the type of crops that are grown, thus affecting the raw material supply. Changes in consumer taste alter what products are grown and raised. For example, a shift in consumer tastes away from red meat may cause demand—and therefore prices—for beef to fall, while increased demand for produce may shift the mix of fruits and vegetables that farmers raise.

Climate change has placed intensifying pressure on many companies in the agribusiness industry to remain relevant, and profitable, while adapting to the threats posed by large-scale shifts in weather patterns.

Reasons for Underdevelopment of Agribusiness sector in India include –

**Shortage of material and power:** There is acute shortage of basic raw materials required by agro units. Agro industries are face shortage of power due to this problem; they are unable to make full utilization of plant capacity.

**Lack of adequate finance:** All business firms require sufficient funds to meet their fixed capital and working capital requirements. Credit facilities for agri business organizations are inadequate.

**Outdated technology:** Majority of the agro based units uses old techniques of production and outdated machinery or equipment's. They cannot afford new latest and costly machines and equipment's due to lack of poor financial conditions and unknown about technological aspects.

**Inadequate marketing facilities:** An agri business unit has to face several difficulties in the marketing and distribution of agricultural products because they have not their own marketing network.

**Weak organization and management:** Agri business firms are generally managed by the owner who does not have professional qualification and required skills for efficient management of enterprises. There is lack of proper division of work and specializations.

**Lack of trained personnel:** Agro business firms find it too difficult to recruit, retain, and motivate to the managerial and technical skilled personnel in the organization as they look for better opportunities.

**Research and development:** Lack of research and development in agribusiness sector are a major problem in successful running and development of agro based industries in India. There is also lack of research about consumer habits, demands and what they prefer in consumption.

**Lack of infrastructure facilities:** Lack of transportation, communication, warehouses and other essentials facilities are common hurdles in the path of development of agribusiness sector in India. Agricultural produce such as fruits and vegetables are wasted about 30 per cent of total production per annum due to perishable nature and lack of proper transportation.

**Seasonality of products:** Most of agricultural produce are seasonal in nature. Due to this nature there is no continuous and stability in the supply of primary raw materials, which are necessary for industrial production process.

### **Conclusion**

Improving agribusiness can increase added value of raw materials, strengthening local rural economies, food security, and improving the quality of life in many homes at risk of exclusion and vulnerability. Policies, incentives and regulatory frameworks that safeguard and promote agro-industries need to be focussed upon for lifting rural populations out of poverty in India.

### **21. Discuss the natural resource endowment of Russia. How does it shape Russia's worldview? Examine.**

#### **Approach:**

Question is asking you to discuss, it requires you to write a debate where one has to use your skill at reasoning, backed up by deliberately selected evidence to make a case for and against an argument. Also, you have to examine (dig deep) how natural resource endowment of Russia shape Russia's worldview.

**Introduction:**

Russia is the largest country in the world; it covers a vast amount of topographically varied territory, including much that is inaccessible by conventional modes of transportation. Natural resources remain a crucial part of Russia's economy and play a role in its projection of power abroad and account 10.7% of India's GDP.

**Body:****THE NATURAL RESOURCE ENDOWMENT OF RUSSIA**

Russia is probably richer in natural resources than any other country in the world. It has abundant supplies of oil, natural gas, timber and valuable minerals, such as copper, diamonds, lead, zinc, bauxite, nickel, tin, mercury, gold and silver— most of which are located in Siberia and the Far East. The value of Russia's resources is huge. Russia's resources are not just oil and gas. Russia also has major deposits of metals and minerals, timber supplies, and vast amounts of land. Many of Russia's natural resources are located far from industrial processing centers.

The fuel resources that supported development of industrial centres in European Russia have been depleted, necessitating reliance on coal, natural gas, and petroleum from Siberian deposits. However, Russia still has an estimated 6 percent of the world's oil deposits and one-third of the world's natural gas deposits, making it a major exporter of both commodities.

Russia possesses rich reserves of iron ore, manganese, chromium, nickel, platinum, titanium, copper, tin, lead, tungsten, diamonds, phosphates and gold. Its diverse mineral resources have given many of its products a strong position in world markets.

There is a large uranium mine near Krasnokamensk, in the Altai region about 25 miles from where the Russian, Mongolian and Chinese borders all come together. It is a gigantic hole, nearly mile long, three quarters of a mile wide and 330 yards deep. are-earth producing countries include Russia, Malaysia, Kyrgyzstan and Kazakhstan. As of the mid 2000s, ninety-five percent of the world's rare earths came from China.

**HOW DOES IT SHAPE RUSSIA'S WORLDVIEW?**

Russia's raw materials provide significant inputs for an industrial economy. The abundance of oil and natural gas has made Russia virtually self-sufficient in energy and a large-scale exporter of fuels. Oil and gas were primary hard-currency earners for the Soviet Union, and they remain so for the Russian Federation.

Russia also is self-sufficient in nearly all major industrial raw materials and has at least some reserves of every industrially valuable nonfuel mineral—even after the productive mines of Ukraine, Kazakstan, and Uzbekistan no longer were directly accessible.

Tin, tungsten, bauxite, and mercury were among the few natural materials imported in the Soviet period. The forests of Siberia contain an estimated one-fifth of the world's timber, mainly conifers.

Russia's reliance on its resources have made them an obvious target for US sanctions. New deposits have indeed been slow to develop within Russia and sanctions have been cited as a possible cause.

**Conclusion:**

Russia's role in the global economic system today, and the Soviet Union's in the past, is dominated by the export of natural resources, particularly oil and gas. The rents earned from these exports are both a source of strength and weakness, as they link



the fortunes of Russia's domestic economy to the volatility of global resource markets.

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**22. What are the emerging frontiers in the field of conventional energy resources? Discuss the key issues surrounding those.**

**Approach:**

The question has two parts students are expected to address each part equally, also it is important to understand the demand of the question in each part and write answer accordingly.

**Introduction:**

Conventional sources of energy are the natural energy resources which are present in a limited quantity and are being used for a long time. They are called non-renewable sources as once they are depleted; they cannot be generated at the speed which can sustain its consumption rate. They are formed from decaying matter over hundreds of millions of years. These resources have been depleted to a great extent due to their continuous exploitation. It is believed that the deposits of petroleum in our country will be exhausted within few decades and the coal reserves can last for a hundred more years. Some common examples of conventional sources of energy include coal, petroleum, natural gas and electricity.

**Body:**

Emerging frontiers in the field of conventional energy resource-

The hydrogen industry and the energy industry brushed shoulders at multiple points throughout their history. The first demonstrations of water electrolysis to produce carbon-free hydrogen fuel and fuel cells to convert hydrogen to electricity were engineered in the 1800s. Hydrogen was used to fuel the first internal combustion engines. Green Hydrogen is currently enjoying unprecedented political and corporate interest, at least 24 countries have now drafted policies or are setting up strategies for the hydrogen economy.

Hydrogen is versatile. Hydrogen can be used as a chemical feedstock, fuel, or energy carrier and storage, and has many possible applications across industries, heavy-duty transport, power, and buildings sectors. Multi-sectoral applications provide a conducive environment towards an exponential rise in demand and subsequent benefits of scale.

Hydrogen is uniquely clean. The USP of hydrogen is that it can help to decarbonise industrial processes and economic sectors, where reducing carbon emissions is both urgent and hard to achieve. Fertilisers, oil-refining, heavy industry like steel and heavy-duty transport are some examples of hard sectors that likely will need hydrogen to decarbonise.

Biofuel is the other frontier in the field of conventional energy resource which has been extensively researched over a period of time Biofuels in India are of strategic importance as it augers well with the ongoing initiatives of the Government such as Make in India, Swachh Bharat Abhiyan, Skill Development and offers great opportunity to integrate with the ambitious targets of doubling of Farmers Income, Import Reduction, Employment Generation, Waste to Wealth Creation.

The Government approved the National Policy on Biofuels-2018 in June 2018. The policy has the objective of reaching 20% ethanol-blending and 5% biodiesel-blending by the year 2030. Among other things, the policy expands the scope of feedstock for

ethanol production and has provided for incentives for production of advanced biofuels.

Molten salt reactors are the new phenomena in the field of nuclear energy.

Nevertheless, advocates say one emerging technology, the molten salt reactor, could provide carbon-free electricity with fewer radiation risks than traditional nuclear.

Issues surrounding these new frontiers-

Research in these technologies is still in initial phase barring biofuels it is going to take a long time to get these technologies to show their impact at global level.

Making ethanol from grains is the worst possible solution, not only because of its impact on food production, but mostly because of its poor energy yield. In fact, between fertilizers, seeds, harvesting, transportation, and treatment, the amount of energy contained in a liter of ethanol is barely more than that required to obtain it from cereals. Therefore, from an energy standpoint, it is unreasonable to use this type of raw material.

Also, the cost of energy through these new systems is quite high which makes these technologies ineffective in the long run.

Environmental concerns are the other issues that need to be looked into, transition into renewable sources of energy has been in focus from quite a long time now there has been a significant shift from non-renewable to renewable sources of energy throughout the globe.

**Conclusion:**

Coal will continue to be an abundant, though potentially highly contaminating source, and it is necessary to make advances in its use with the capture and storage of CO<sub>2</sub> but at this time, the most important challenge may well be to encourage renewable energies in order to make them a significant percentage of the total supply. Solar energy is more abundant, but has the problem of dispersion. At some point in the near future, it will have to become the dominant and truly massive, sustainable and unlimited renewable energy source. That will call for the solution of technological problems that limit its spread and affect its current high price, and will require decisive public support.

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**23. What are the key issues related to the extraction and processing of rare earth elements? Discuss.**

**Approach**

The candidate needs to discuss what rare earth elements are, in the initial part and then elaborate upon the key issues related to the extraction and processing of rare earth elements.

**Introduction**

Rare earth elements are obtained from a group of 15 elements referred to as the lanthanide series in the periodic table of elements. Scandium and yttrium, while not true rare earth elements, are also included. REEs are key components in many electronic devices that we use in our daily lives, as well as in a variety of industrial applications.

**Body**

Rare earth metals comprise seventeen chemical elements — lanthanum, cerium, praseodymium, neodymium, promethium, etc. Despite their classification, most of these elements are not really “rare”. One of the Rare Earths, promethium, is

radioactive. As essential and functional materials, rare earth elements have been named “The Vitamins of Modern Industry”.

According to the Rare Earth Technology Alliance (RETA), the estimated size of the Rare Earth sector is between \$10 billion and \$15 billion. But at the same time, there are some issues with regards to their extraction and processing, some of which can be seen from the following points –

**Low Concentration:** Global rare-earth reserves are at more than 130 million metric tons. However, most of those reserves either are too low in concentration to be extracted economically, or they are not readily accessible, such as metals locked away in deep-sea manganese-based nodules or hydrothermal deposits.

**Extraction Costs:** REMs are found in a variety of minerals, but not all are equally suitable for economic development. REMs are generally found in concentrations below what is economically viable for extraction at current prices using available technology.

**Environmental factors:** Extraction and mining of rare earth metals involves similar land-use exploitation, environmental damage and ecological burden as any other mining operation. They are mined using extremely energy-intensive processes, spewing carbon emissions into the atmosphere and toxins into the ground.

**Recycling:** Less than 1% of rare earth elements are currently recycled given the difficulty of separating these elements from existing alloys. This should be seen in the context of skyrocketing demand, which will limit the ability of recycled rare earths to meet the expected short and medium-term needs.

**Geopolitical Issues:** China is the world’s largest producer of REEs, accounting for over 60% of global annual production, estimated at 132,000 tonnes for 2019. It withheld the supply of Rare Earths to Japan after their dispute over Senakaku Islands, which alerted the world to use of rare earths for geopolitical purposes.

**Supply Monopoly:** China remains virtually the only producer of the valued heavy REMs. China imposed export restrictions on REE between 2010 and 2014, resulting in dramatic increases in REE prices during those years. This leads to uneconomical trends in other countries for rare earth extraction.

**China Factor:** China’s intents of hegemony, non-solidarity with other nations does not augur well for the environment in general, as well as for geo-politics and global renewable energy usage and scenarios. Its intents on doing the same with its vast rare earth reserves will be detrimental.

The high vulnerability of the EV industry could raise doubts over the feasibility of decarbonisation efforts given the envisaged role of electric vehicles in carbon reduction.

Beyond EVs and wind turbines, these metals are used in strategic sectors such as defence (drones for instance) and digital technologies. The omnipresence of digital technologies could make the world economy even more dependent on these critical metals. Addressing this is a challenge as big as sourcing sustainable energy for the transition to net zero.

**Way Forward –**

Replacing, reducing or recycling rare earth metals can lower the impact of using these elements. E.g. – Alternatives exist in the wind industry.

Diversifying the supply chain of Rare Earth Metals around the world, especially focusing on the same in India.

Recycling of these rare earth metals for continuous usage for various technologies is a good option that can be considered.

**Conclusion**

Rare earths have become indispensable and, in many cases, irreplaceable components of materials that are essential in modern life. Thus the usage of these metals, which form a critical part of the renewable energy revolution should be handled with careful, sincere and cleaner measures if the way forward has to be greener and environment-friendly.

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**24. What are the major areas of dispute related to water resources between India and its neighbours? Analyse.****Approach**

Candidates are expected to first to write about disputes of India over water resources with neighbouring countries. And try to analyse on major areas of disputes related to it.

**Introduction**

Water dispute is a term describing a conflict between countries, states, or groups over the rights to access water resources. The United Nations recognises that water disputes result from opposing interests of water users, public or private. A wide range of water conflicts appear throughout history, though rarely are traditional wars waged over water alone.

**Body**

Water dispute in South Asia:

Water remains a politically contested issue in much of South Asia. The region is facing water shortage it will continue to face increasing demands on energy and water with rapid industrialisation. UN reports that by 2030, water demand in India will grow to almost 1.5 trillion cubic situation is further aggravated by the India's water disputes with its neighbours and inter-state river water disputes in India. Combine these factors with the impact of climate change that's reducing the amount of water in the Brahmaputra and many other basin also changing the patterns of water flow.

Water resources disputes between India and its neighbour:

**India-China Water Dispute:** As an upstream riparian region, China maintains an advantageous position and can build infrastructure to intentionally prevent water from flowing downstream. China's dam-building and water division plans along the Brahmaputra (called Yarlung Zangbo in China) is a source of tension between the two neighbours, despite the two having signed several MoUs on strengthening communication and strategic trust.

**India-Bangladesh water issue:** Sharing the waters of the Teesta river, which originates in the Himalayas and flows through Sikkim and West Bengal to merge with the Brahmaputra in Assam and (Jamuna in Bangladesh), is perhaps the most contentious issue between two friendly neighbours, India and Bangladesh.

**India-Nepal water issues:** Since 1954, when the Kosi Agreement was signed between India and Nepal, talks between the two governments have stalled and water rights issues have not been addressed. The dispute between India and Nepal might seem minor but it gains strategic importance, because the disputed area lies near the Sino-

Indian border. Also delimitation of the boundary along the Maha Kali River is matter of dispute.

India–Pakistan Water Dispute: Accord called the Indus Waters Treaty in 1960 was carried forward. The Indian Government has more than 40 projects that are either already completed or in the proposal stage on the western rivers. The carrying of such activities within the western rivers has irked Pakistan. The latest dispute is over hydroelectric projects that India is building along the Chenab River.

India–Bhutan water dispute: Initially, the cooperation was based on the development of small-scale hydro projects such as Tala, Chukha and Kurichu. On the other hand, the people of Bhutan raised objections to such projects on their long run effects in the country. For instance, if Bhutan ever decides to construct storage projects, issues will get intense and more problematic when it comes to dealing with India.

### **Conclusion**

Freshwater is a precious commodity and a strategic asset whose importance in geopolitics cannot be underestimated. Under such circumstances, the increasing need for power and stable water levels could prompt reconsideration in bilateral water-sharing treaties in future.

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## **25. The South China Sea conflict is essentially a manifestation of energy skirmishes.**

### **Comment.**

**Approach-** Candidate can explain the geography of the South china sea. With the help of some data and analysis importance of the region for the energy security of the south east Asia can be shown while drawing attention to insecurities of China.

### **Introduction**

South China Sea is an arm of western Pacific Ocean in Southeast Asia. It is south of China, east & south of Vietnam, west of the Philippines and north of the island of Borneo. It is connected by Taiwan Strait with the East China Sea and by Luzon Strait with the Philippine Sea. It contains numerous shoals, reefs, atolls and islands. The Paracel Islands, the Spratly Islands and the Scarborough Shoal are the most important.

### **Body**

South china sea and energy security

The dispute over the South China Sea is a reflection of increased nationalist sentiment throughout the region, but by virtue of the resources in the disputed area, it also has an important role to play with regards to regional energy security.

The U.S. Energy Information Administration estimates that there are “11 billion barrels (bbl) of oil reserves and 190 trillion cubic feet (Tcf) of natural gas reserves in the South China Sea.

On top of these known and accessible deposits, the U.S. Geological Survey (USGS) estimates that there may be between “5 and 22 billion barrels and between 70 and 290 trillion cubic feet of gas in as-yet undiscovered resources.

These hydrocarbon reserves are not distributed equally across the South China Sea, and there is some uncertainty about how they are distributed. Paracel island territory does not have significant discovered conventional oil and gas fields and thus has no proved or probable reserves.

Spratly island may contain significant deposits of undiscovered hydrocarbons...anywhere between 0.8 and 5.4 (mean 2.5) billion barrels of oil and between 7.6 and 55.1 (mean 25.5) Tcf of natural gas in undiscovered resources.”

The second way in which the South China Sea is important to regional energy security is as a point of transit. In 2013, China and Japan imported 4.5 and 3.2 million barrels of crude oil per day (MMbbl/d); more than half of the roughly 14 million barrels of crude oil from the Middle East that passed through the South China Sea daily, with much of the remainder going to South Korea.

Of the 6 trillion cubic feet of liquefied natural gas (LNG) that passed through the South China Sea in 2011, roughly 56% went to Japan, 24% went to South Korea, and 19% went to China.

Speaking more generally, roughly 33% of the world’s seaborne oil travels through the Strait of Malacca, making it a chokepoint for energy imports, trade, and other shipping headed towards East Asia.

The Asia-Pacific region between 2005 and 2030, energy demand is expected to grow at a rate of 2.4% (as compared to a world average of 1.5%), net imports of fossil fuels are expected to double, and “the region’s oil dependency will increase from 57.5% to 66.4%.”

This means that countries in East/Southeast Asia will only become more dependent on the sea lines of communication (SLOC) that are responsible for bringing in their energy imports. Japan, for example, already buys “nearly 90% of its oil from the Middle East, making it vulnerable to disruptions of even a few days in the Strait of Hormuz.

Massive energy consumption has allowed for China’s sustained economic growth, which in turn has ensured some measure of social stability. Although the Chinese economy has in many ways liberalized, energy is still very much controlled by the central government.

The true importance of the South China Sea with regards to China’s energy security comes down to its role as a sea line of communication. China is disproportionately dependent on the South China Sea; it is “the only major power with a vital strategic interest in Freedom of Navigation in the South China Sea.”

**Energy skirmishes**

China’s local rivals are undertaking major military modernization projects, they too could potentially pose a threat to China’s sea lines of communication. The Spratlys and Paracels sit astride the most direct route between the Strait of Malacca and the port cities on China’s eastern coast.

If the Philippines, Vietnam, or the United States were to take commanding positions atop this sea line, it would be a Sword of Damocles hanging over China’s maritime trade routes.

China has sought to reduce its dependency on sea-borne imports via pipeline projects across Eurasia as part of its “One Belt, One Road” initiative, but these projects have met with significant delays.

This is not to say that any of these countries has an interest in doing so, but from the perspective of Chinese strategic planners, the potential risks are very high. Hence the control of south china sea.

### **Conclusion**

South china sea plays major role in ensuring steady flow of oil to the region. Overdependence on the sea routes is causing insecurity dilemma in the minds of strategic thinkers of China. The rise of china has not been peaceful, and the posturing in the SCS is the result of the same and is arising nothing out of but the energy insecurity.

**26. Discuss the marine resource endowment of India. What are issues pertaining to the efficient and sustainable extraction of marine resources?**

**Approach:**

Question is asking you to discuss, it requires you to write a debate where one has to use your skill at reasoning, backed up by deliberately selected evidence to make a case for and against an argument.

**Introduction:**

The third largest and gifted ocean in the world “Indian ocean” surrounds India on three sides. With an exclusive Economic Zone (EEZ) of 2.02 million sq.km and a long coastline of 8,118 km with rich and diverse marine living resources, the Indian Government is promoting ‘Blue Growth Initiative’ which focus on utilisation of wealth from the marine and other aquatic resources of the country for improving the lives and livelihoods of fishermen and their families.

**Body:**

**THE MARINE RESOURCE ENDOWMENT OF INDIA**

Manganese nodules contain significant concentrations of manganese, iron and copper, nickel, and cobalt all of which have a numerous economic use.

Indian Ocean contain vast amount of minerals, including the cobalt, zinc, manganese and rare earth materials. These minerals are needed for electronic industry to make smart phones, laptops and car components etc. This can help Make in India initiative. Seawater contains economically useful salts such as gypsum and common salt. Gypsum is useful in various industries.

Marine fisheries wealth around Indian coastline is estimated to have an annual harvestable potential of 4.4 million metric tonnes. It will lead to food security through fishery sector and other sea food resources. It would also help in reducing malnutrition issue in India as fishes are good source of nutrition.

The main energy resources present in Indian Ocean are petroleum and gas hydrates. Petroleum products mainly includes the oil produced from offshore regions. Gas hydrates are unusually compact chemical structures made of water and natural gas. It will help in diversification of energy resources and will provide new resources for energy e.g., gas hydrates.

Marine resources from Indian Ocean can serve as the backbone of India’s economic growth and can help India to become a 5 trillion-dollar economy by 2022. Blue economy, through sustainable use of oceans, has great potential for boosting the economic growth.

**ISSUES PERTAINING TO THE EFFICIENT AND SUSTAINABLE EXTRACTION OF MARINE RESOURCES**

Oil spills are considered to be a major cause of marine pollution. Leakage from tankers during transportation of crude oil, a collision of tankers, rigs operation, pipeline leaks and washing of tankers are major sources of oil spills. Oil spills destroy

the fish habitats and alter the ecological conditions of seawater which led to the mass mortality of fish and other organisms.

Extinction of a species affects other species is accelerating the extinction of more species through a chain reaction.

every year tsunamis, cyclones, hurricanes typhoons etc. leave thousands of people stranded and property worth millions destroyed.

Increasing population density, industrial growth and socio-economic development is giving rise to a variety of activities, the collective impact of which is multiplying the pressures on the coastal zone and its resources.

Impact of climate change or the changes in sea temperature, acidity, threaten marine life, habitats, and the communities that depend on them. Burning of fuels, industrialization, urbanization, etc. are major sources of different harmful gases such as CO<sub>2</sub>, CH<sub>4</sub>, NO and CFCs which led to the production of the greenhouse effect. The heating of earth's surface resulting into melting of ice in glaciers and poles are expected to further raise the sea level in the range of 21–71 cm by the year 2070. This could mean that many fisheries dependent on upwelling will suffer or cease to exist.

Adverse environmental change, especially in spawning habitats, decreases the stock strength of the coastal fish. The lack of a sustainable management regime is accelerating the rate of resource decline further.

Marine pollution in form of excess nutrients from untreated sewerage, agricultural runoff, and marine debris such as plastics

Overexploitation of marine resources like illegal, unreported, and unregulated extraction of marine resources.

**Conclusion:**

India is poised to emerge as a major maritime and naval power. It has placed the Blue Economy high on its agenda for economic growth. The essential objective is to develop Blue Economy through a robust regulatory framework which contributes to sustainable use of existing natural resources. The Indian government encourages proactive and facilitative governance which supports job creation, encourages innovation, and provides opportunities for knowledge-based businesses in key maritime sectors, within the framework of the nation's pursuit of Sustainable Development Goals (SDGs). India being rich in marine biodiversity, there are opportunities for providing financial benefits to the coastal communities and the profit made should encourage the community to conserve the reckless deteriorating biodiversity.

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**27. What are the factors responsible for the high fuel cost in India? How can the government address the rising cost? Suggest.**

**Approach**

Mention the factors responsible for the high fuel cost in India and then suggest how can the government address the rising cost.

**Introduction**

Petrol is now retailing above Rs 90 per litre in all major cities including Delhi and is on the verge of crossing Rs 100 in major cities. It has already hit a century in some circles. Diesel, too, has climbed to levels never seen before in the country. Experts



have said the continuous increase in fuel prices will have a widespread impact on citizens and the overall economy.

**Body****THE FACTORS RESPONSIBLE FOR THE HIGH FUEL COST IN INDIA**

Firming of international crude oil rates and extremely high taxes levied on the fuel are the key reasons behind the latest round of petrol and diesel price hike in the country.

International crude oil price including the Indian basket of crude, which comprises Oman, Dubai and Brent crude. Global crude oil prices have been increasing after organisation of the petroleum exporting countries (OPEC)-plus decided to continue supply curbs.

Crises in countries like Venezuela and Iran are increasing. There is a pressure on oil prices due to decrease in production.

Global currencies have weakened against the US dollar. As the rupee value is depreciating, oil refineries have to pay more rupees to import crude oil. This is also one of the reasons why fuel prices are high.

Being the third-largest importer of oil in the world, the recent firming of international crude oil prices has severely impacted India, where citizens are paying extremely high rates for fuel in comparison to neighboring countries.

The biggest reason behind higher fuel prices in the country is the high rate of central and state taxes. At the moment, Indians pay one of the highest taxes on fuel in the world.

Since India follows a dynamic system for altering fuel rates, oil marketing companies are mostly responsible for the recent hikes and the government has no control over it. However, the government does impose a tax on the base price of fuel.

**HOW CAN THE GOVERNMENT ADDRESS THE RISING COST?**

Reducing taxes on petroleum products will result in a reduction in costs of transport and thereby reduces the price of many consumer goods. This will result in an increase in markets and economy and also reduces the burden on common people. Instead of depending on these taxes on petrol & diesel, the Indian

government needs to create more revenue sources such as increasing the number of people that pay income tax, recovering bad loans of public sector banks etc.

More and more people are buying their own vehicles, especially after witnessing the pandemic and hence the demand for petrol and diesel is increasing and thereby the pressure on foreign exchange reserves and 'Trade deficit' are increasing. This will further lower the value of the rupee. To reduce the dependence on crude oil imports, there is a need to invest in the exploration of crude oil reserves in the country.

There is a dire need to encourage people to use electric vehicles and to use renewable energy resources. This will reduce the burden on foreign exchange reserves as well as leads us towards eco-friendly living.

**Conclusion**

If the crude oil prices are increased in the coming days, there will be a huge burden on people whether they own a vehicle or not. Because high fuel prices increase the cost of transport and thereby increases the price of consumer goods. To avoid that situation, the government needs to work on reforms in petroleum pricing.

**28. Examine the factors responsible for the prevalence of water shortage in different parts of the country. To what extent can river interlinking address this problem? Discuss.**

**Approach**

The candidate needs to examine the factors responsible for prevalence of water shortage in different parts of the country in the first part of the answer while also discussing the extent to which river interlinking can address the problem of water shortage in the second part of the answer.

**Introduction**

Water touches every aspect of life, and in India uncertainty over access to and the availability of this basic resource is reaching crisis levels, as is evident from NITI Aayog Report, Composite Water Management Index (CWMI), which said India is facing its worst water crisis in the history.

**Body**

In this light, factors responsible for the prevalence of water shortage in different parts of the country include –

**Insufficient water per person:** With a population of 1.2 billion according to 2011 census, India has only 1,000 cubic meters of water per person. A nation is water-stressed if it has less than 1,700 cubic meters per person per year.

**Rapid Urbanization:** India is urbanizing rapidly. This implies heightened water demand from households, industry and agriculture. Concretization also reduces the ground-water replenishment.

**Poor water quality:** resulting from insufficient and delayed investment in urban water-treatment facilities. Water in most rivers in India is largely not fit for drinking. Despite the Ganga Action Plan, launched in 1984 to clean up the Ganges River, much of the river remains polluted with a high coliform count.

**Over-exploitation:** In the last four decades, about 85% of the total addition to irrigation has come from groundwater. This is clearly unsustainable resulting in steep depletion of the groundwater table.

**Policy Issues:** Groundwater is used to cultivate water-intensive crops like paddy and sugarcane (promoted by Green revolution) in rain deficit states like Punjab and Maharashtra respectively. State procurement policy and subsidized electricity in Punjab make it profitable for farmers to produce rice.

**Mismanagement of Water resources:** There are leakages in the water supply systems. India receives an average annual rainfall of 1170 mm but due to poor storage infrastructure, it stores only 6% of rainwater.

**No Reliable Data:** There is no single water database for the country. In 2016, the standing committee on water resources of the Indian parliament finally recommended having a national groundwater database but there is no progress in this regard.

The National River Linking Project (NRLP) formally known as the National Perspective Plan, envisages the transfer of water from water 'surplus' basins where there is flooding to water 'deficit' basins where there is drought/scarcity, through inter-basin water transfer projects. In this regard, river interlinking can tackle India's water shortage as explained below –

**To overcome large variation in rainfall and available water resources in space and time:** In a monsoonal climate that is already erratic and highly seasonal in nature. For

example, nearly half of India's farms (49%) rely solely on rain for their water. These are hit the hardest by disrupted monsoon rains.

Diversion of water from water surplus basins to water deficit basins/regions: It is the inter-basin water transfer where parched regions of peninsular and water stressed regions will have regular supply of water.

Use of the surplus water which is otherwise flowing into the sea unutilized: The project claims to provide additional irrigation to 35 million hectares (m ha) in the water-scarce western and peninsular regions.

To mitigate likely adverse impact of climate change, short term and long term: Interlinking of rivers will reduce regional imbalances significantly and provide benefits by the way of additional irrigation potential, domestic and industrial water supply, hydropower generation, and transport facilities.

But at the same time, it is necessary to consider the negative effects of river interlinking in India in terms of its overall impact –

The interlinking of river envisages the building of many dams, canals and tunnels with some of them having high lifts up to 120 m. This will lead to a huge social and environmental cost. The recent example is the proposed Ken-Betwa link, which puts in danger over 4,100 hectares of forest land.

Along with the ecological cost, the project will also bring a great human cost in terms of those displaced by it where there exists no estimate to the number of people who will be affected by the river linking project.

Expensive proposition: Interlinking of rivers is a very expensive proposal where initially, more than Rs.5,00,000 crore was estimated as the total project cost.

It will not only add to climate change impact through destruction of forests means destruction of carbon sinks, and reservoirs in tropical climate are known sources of methane and carbon dioxide, but will also reduce our capacity to adapt to climate change.

The interlinking would also require India to enter into agreements with Nepal and Bangladesh, as these countries share the basins of the Ganga and Brahmaputra river systems. But both are apprehensive about the project.

Way forward –

River rejuvenation ought to be a policy priority of the Centre and state governments. There is a need to leverage Information Technology to revamp water-related data systems, which seem to be sorely lacking in coverage, efficiency or robustness.

Sustainable operations and maintenance of irrigation systems must be boosted.

There is a need to follow conservation agriculture i.e. farming practices adapted to the requirements of crops and local conditions.

Decentralised approach, with a key focus on water conservation, source sustainability, storage and reuse wherever possible. A participatory approach is needed in water governance.

### **Conclusion**

The interlinking of rivers project is a major challenge as well as an opportunity to deal with the water related problems where long term strategy to water deficit problem lies in tackling the challenges of interlinking of rivers but short term measures also need to be prioritised for better and early results.

Additional Information:

Under the National Perspective Plan (NPP) prepared by Ministry of Water Resources, NWDAs have already identified 14 links under Himalayan Rivers Component and 16 links under Peninsular Rivers Component for inter basin transfer of water based on field surveys and investigation and detailed studies.

Out of these, Feasibility Reports of 14 links under Peninsular Component and 2 links (Indian portion) under Himalayan Component have been prepared. Draft Feasibility Reports of 7 link projects (Indian portion) of Himalayan Component have also been completed.

The biggest, cheapest, most benign, possibly fastest and most decentralized storage option for India is the groundwater aquifer.

### **29. Good governance is the cornerstone of a successful pandemic mitigation strategy. Comment.**

#### **Approach**

Candidates are expected first to write about the Good governance and its basic characteristics. Then comment on how good governance is the cornerstone of a successful pandemic mitigation strategy with proper substantiation.

#### **Introduction**

In times of crisis such as the current COVID-19 pandemic and its economic and social repercussions, public governance matters more than ever. Governance arrangements have played a critical role in countries' immediate responses, and will continue to be crucial both to the recovery and to building a "new normal" once the crisis has passed.

#### **Body**

Good governance and its characteristics:

In the 1992 report entitled "Governance and Development", the World Bank set out its definition of Good Governance. It defined Good Governance as "the manner in which power is exercised in the management of a country's economic and social resources for development".

Good governance has 8 major characteristics. 'It is participatory, consensus-oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follows the rule of law.

Good governance as a cornerstone of a successful pandemic mitigation strategy:

During the COVID-19 pandemic the challenges have become extraordinarily difficult due to the speed and scale of COVID-19 response programs, work overload on implementing and accountability institutions, including media and civil society, and workforce safety concerns and lockdowns.

The public investment, be it for obtaining necessary health products and supplies, or for providing essential public services is channelled mainly through public procurement. Therefore the impacts of chosen procurement strategies have an immediate effect on the effectiveness of policies and efficiency of administration for dealing with the pandemic and its social and economic consequences.

The trends in policy-making towards a more pro-active approach to building strategies that reduce risk, enhance resilience, and focus on recovery and functionality by Good Governance has been a new Toolkit.

The crisis has created environments that was ripe for corruption and bribery.

Identifying and addressing corruption risks thus was crucial to protect trust in public

institutions and business, and to galvanise public confidence in the governments' ability to mobilise an effective crisis response.

Issues such as trust in government and trust in expert advice, and the boundary between the experts and the political decision-making interface were brought to the fore by the crisis. Governments faced with the need to synthesise information from multiple sources and actors, and to use it to feed into governments' plans and decision making to tackle crisis.

Maintaining a trusted connection between decision makers and the scientific suppliers of evidence, is essential for effective decision making in an environment faced with very high uncertainty. For example, by including experts from a variety of backgrounds this ensures that decisions are informed by credible, neutral advice. The consultation of civil society organisations, the private sector, citizens, and international organisations can contribute to the quality of the advice given, as well as add credibility and inclusiveness.

Effective public communication by the central government and Behavioural communication campaigns have played an important role in facilitating the enforcement of regulations, by nudging or instructing wide segments of the population to comply with required measures – from washing their hands, to respecting the provisions of lockdowns and social distancing.

One of the more visible strategy has been Aarogya Setu mobile app, which was rolled as e governance model and uses a combination of bluetooth, global positioning systems (GPS), artificial intelligence (AI) and data analytics for contact-tracking and contact-tracing.

The outbreak of the pandemic has seriously disrupted the functioning of both these institutions which have hitherto been in charge of ensuring executive accountability. However, the present crisis has unfolded a situation where ensuring extraordinary governmental accountability, transparency and responsiveness are crucial like never before.

Unfortunately, however, the lockdowns imposed by governments to contain the virus had also affected the operation of the information regime in many countries, including India. RTI/FOI activities came to a stand-still in these countries in the early phases of the lockdowns, making it impossible for the public to access critical government information.

### **Conclusion**

The effective functioning of governance is the prime concern of every citizen of the country. The citizens are ready to pay the price for good services offered by the state, but what is required is a transparent, accountable and intelligible governance system absolutely free from bias and prejudices

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### **30. Discuss the key challenges being faced by infrastructure financing. How can those be addressed?**

Approach- Question is straight forward. Candidate can outline the issues faced by the India in financing infrastructure projects. Way forward can be given citing some examples and data.

### **Introduction**

India's infrastructure at the beginning of the century was in need of a total overhaul. It was a drag on the rapid growth of the country's economy and adversely affected

the lives of Indian citizens. Before the market liberalisation of the 1990s, “infrastructure projects were typically financed from the limited resources of the public sector, which was characterised by inadequate capacity addition and poor quality of service”. The government looked to public-private partnerships to promote investment and revitalise infrastructure sector.

### **Body**

Key challenges in infrastructure financing

In the 1990s, the economy grew rapidly – by 7%-9% a year – and the pressures on infrastructure increased. As a result, infrastructure came to be regarded as a major constraint in sustaining the rapid growth and in attracting investment or doing business in India.

India has been focussing on infrastructure development across various sectors, which demand huge financial resources. However large social welfare expenditure and low tax-to- GDP ratio limits government capacity to fund them.

**Fiscal Burden:** Almost half of the total investment in the infrastructure sector is done by the Government through budget allocations. But Government funds have competing demands, such as, education, health, employment generation, among others.

**Asset-Liability Mismatch of Commercial Banks:** Commercial banking sector’s ability to extend long-term loans to the infrastructure sector is limited.

**Need for an Efficient and Vibrant Corporate Bond Market:** The corporate bond market is still a long way to go in providing adequate financing to the infrastructure sector in India.

**Insufficiency of User Charges:** A large part of the infrastructure sector in India especially irrigation, water supply, urban sanitation, and state road transport is not amenable to commercialisation for various reasons. Government cannot levy user charges.

**Legal and Procedural Issues:** Issues relating to land acquisition and environmental clearances add uncertainty which affects the risk appetite of investors as well as banks. With financing in long gestation period it becomes difficult to keep continuous flow of capital.

What can be done?

The Economic Survey 2017-18 has assessed India’s infrastructure financing needs at \$4.5 trillion by 2040. The Vijay Kelkar committee had put out a balanced report in 2015 on overhauling the PPP ecosystem, including governance reform, institutional redesign, and capacity-building.

The government is planning to set up a new Development Finance Institution (DFI) essentially to fill the gap in long-term finance for infrastructure sectors. It will be used to finance both social and economic infrastructure projects identified under the National Infrastructure Pipeline (NIP).

DFIs provide long-term credit for capital-intensive investments spread over a long period and yielding low rates of return. Soon after independence, the institutional framework for development banking began- IFCI (1948), IDBI (1964), IIBI (1972), NABARD and EXIM Bank (1982), SIDBI (1990), etc.

Government should avoid trying to minimise risk to themselves by passing on uncertain elements in a project like the land acquisition risk to the private partner.

Government initiatives

Under UDAY scheme the government has taken steps to improve operational and financial parameters of discoms.

National Infrastructure Investment Fund (NIIF) with an initial corpus of Rs 40,000 crore.

With Initiatives such as 'Housing for All' and 'Smart Cities,' the government is working on reducing the bottlenecks that impede growth in the infrastructure sector.

The National Highways Authority of India (NHAI) launched Masala Bonds in May 2017, for raising capital for funding the infrastructure projects in India.

Relaxation in External Commercial Borrowing (ECB) norms.

National Infrastructure Pipeline: The National Infrastructure Pipeline is a group of social and economic infrastructure projects in India over a period of five years with a sanctioned amount of ₹102 lakh crore.

### **Conclusion**

India is one of the fastest growing large economy in the world. Combined with aspirations of young population, India needs world class infrastructure to emerge as dominant player on global platform. For the rapid development, seamless supply of capital is the basic necessity. If the policies are made to address the bottlenecks, we are not far away from realising our potential.

