



An Institute for Civil Services

UPSC MAINS 2020 MODEL HINTS

A background image showing a hand holding a pen, writing on a document. The document has some faint, illegible text. Overlaid on this are several large, overlapping, semi-transparent circles in shades of orange, yellow, and blue. The text 'MODEL HINTS' is written vertically in a large, semi-transparent font on the right side of the page.

GENERAL STUDIES PAPER-1



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UPSC MAINS 2020

GS PAPER - 1

Time Allowed: 3 hrs.

Max. Marks: 250

1. The rock-cut architecture represents one of the most important sources of our knowledge of early Indian art and history. Discuss. (Answer in 150 words) (10)
2. Pala period is the most significant phase in the history of Buddhism in India. Enumerate. (Answer in 150 words) (10)
3. Evaluate the policies of Lord Curzon and their long term implications on the national movements. (Answer in 150 words) (10)
4. Discuss the geophysical characteristics of Circum-Pacific Zone. (Answer in 150 words) (10)
5. The process of desertification doesn't have climate boundaries. Justify with examples. (Answer in 150 words) (10)
6. How will the melting of Himalayan glaciers have a far-reaching impact on the water resources of India? (Answer in 150 words) (10)
7. Account for the present location of Iron and Steel industries away from the source of raw material, by giving examples. (Answer in 150 words) (10)
8. Has caste lost its relevance in understanding the multi-cultural Indian Society? Elaborate your answer with illustrations. (Answer in 150 words) (10)
9. COVID-19 pandemic accelerated class inequalities and poverty in India. Comment. (Answer in 150 words) (10)
10. Do you agree that regionalism in India appears to be a consequence of rising cultural assertiveness? Argue. (Answer in 150 words) (10)
11. Indian Philosophy and tradition played a significant role in conceiving and shaping the monuments and their art in India. Discuss. (Answer in 250 words) (15)
12. Persian literary sources of medieval India reflect the spirit of the age. Comment. (Answer in 250 words) (15)
13. Since the decade of the 1920s, the national movement acquired various ideological strands and thereby expanded its social base. Discuss. (Answer in 250 words) (15)
14. The interlinking of rivers can provide viable solutions to the multi-dimensional inter related problems of droughts, floods and interrupted navigation. Critically examine. (Answer in 250 words) (15)
15. Account for the huge flooding of million cities in India including the smart ones like Hyderabad and Pune. Suggest lasting remedial measures. (Answer in 250 words) (15)
16. India has immense potential of solar energy though there are regional variations in its developments. Elaborate. (Answer in 250 words) (15)

17. Examine the status of forest resources of India and its resultant impact on climate change.
(Answer in 250 words) (15)
18. Is diversity and pluralism in India under threat due to globalization? Justify your answer.
(Answer in 250 words) (15)
19. Customs and traditions suppress reason leading to obscurantism. Do you agree?
(Answer in 250 words) (15)
20. How have digital initiatives in India contributed to the functioning of the education system in the country? Elaborate your answer.
(Answer in 250 words) (15)



GS SCORE

UPSC MAINS EXAMINATION, 2020

(GENERAL STUDIES PAPER - 1)

HINTS

1. *The rock-cut architecture represents one of the most important sources of our knowledge of early Indian art and history. Discuss.*

Approach

1. *Introduce Rock cut architecture (25 words)*
2. *Explain rock cut architecture as source of knowledge of Indian art and history (100 words)*
3. *Conclusion (25 words)*

Hints:

Rock cut architecture occupies a central place in Indian architecture. It gives information about life and times of people and helps us understand their society through their perspective.

Rock cut Architecture as source of knowledge

- Rock-cut caves belonging to the third century BCE have been found in different parts of India. It shows the popularity of Yaksha worship and how it became part of figure representation in Buddhist and Jaina religious monuments.
- Depiction of a monumental rock-cut elephant at Dhauli in Odisha gives us information about the social and religious trends in the era. It has Ashokan rock-edict. All these examples are remarkable in their execution of figure representation. The rock-cut cave carved at Barabar hills near Gaya in Bihar is known as the Lomus Rishi cave. It was donated by Ashoka for the Ajivika sect and Buddhist and Jain monks as places of worship and residence.
- The Ajanta Caves in Maharashtra, a World Heritage Site, constitute thirty rock-cut cave Buddhist temples carved; murals here are recognized as some of the greatest art produced by humankind. There are stories from Jataka, depiction of Buddhist legends and divinities. This gives an insight into the socio political scenario in ancient India.
- Kailash temple at Ellora built by the Rashtrakutas and the Ratha temples of Mahabalipuram built by the Pallavas are other examples of rock-cut temples.
- The earliest cave temples include the Bhaja Caves, the Karla Caves, the Bedse Caves, the Kanheri Caves, and some of the Ajanta Caves. Relics found in these caves suggest a connection between the religious and the commercial. Buddhist missionaries are known to have accompanied traders on the busy international trading routes through India.
- Kanheri caves acted as education center in Western India. Water resources are prevalent at Kanheri which shows water harvesting was practiced at caves

Conclusion:

Thus it can be seen that rock cut architecture helps us to trace the life in India and its evolution through socio political perspective.

2. *Pala period is the most significant phase in the history of Buddhism in India. Enumerate.*

Approach

1. *Introduce Pala dynasty (25 words)*
2. *Explain how Pala dynasty played a role in the history of Buddhism in India. (100 words)*
3. *Conclusion (25 words)*

Hints:

The Pala dynasty ruled from 8th century to 12th century CE in the regions comprising Bihar and Bengal. The last centuries of the first millennium were extremely important for Buddhism during the rule of the Pala dynasty.

Role of Pala Dynasty

- **Gopala First Pala king** and founder of the dynasty is considered the first Buddhist king of Bengal and built the monastery at Odantapuri, Bihar.
- **Dharmapala the successor of Gopala** was a pious Buddhist and Founded the Vikramshila University at Bhagalpur, Bihar which was a prestigious university for Buddhism after NALANDA.
- **Devapala**, another PALA king was a staunch Buddhist and built many monasteries and temples in Magadha.
- **Buddhist poet Vajradatta** who composed Lokeshvara Shataka was in Devapala's court.
- Many Buddhist teachers from the Pala kingdom travelled to Southeast Asia to spread the faith. Atisha preached in Sumatra and Tibet.
- Most of the architecture of the PALA dynasty was religious with the first two hundred years dominated by Buddhist art.
- Various **Mahaviharas, Stupas, chaityas**, temples and forts were constructed like Nalanda, vikramashila, somapura, Traikutaka, Devikota, Pandita, Jagaddalavihara are notable.
- A large number of manuscripts on palm-leaf relating to the Buddhist themes were written and illustrated with the images of Buddhist deities at these centres which also had workshops for the casting of bronze images.
- Somapuramahavihara at Paharpur, a creation of Dharmapala is one of the largest Buddhist vihara in Indian subcontinent; its architectural plan has influenced the architecture of countries like Myanmar and Indonesia.
- The **earliest examples of miniature painting in India** exist in the form of illustrations to the religious texts on Buddhism executed under the Palas of the eastern India.
- Pala style was transmitted chiefly by means of bronze sculptures and palm-leaf paintings, celebrating the Buddha and other divinities.
- **Manuscripts** were written on palm leaves in which paintings of scenes of the life of Buddha and several gods and goddesses of Mahayana sects are depicted.
- The **principal centres of production** for both bronzes and paintings were the great Buddhist monasteries at Nalanda and Kurkihar, and the works were distributed throughout Southeast Asia, influencing the arts in Myanmar (Burma), Siam (now Thailand), and Java (now part of Indonesia).
- **Pala arts also had a recognizable impact on the Buddhist art of Kashmir, Nepal, and Tibet.**
- The sculptures of stones and bronze were constructed in large numbers mostly in monastic sites of Nalanda, Bodh Gaya, etc. Most of the sculptures drew their inspiration from Buddhism.

Conclusion:

PALA kings also used Buddhism as soft power diplomacy like Ashoka did in the Mauryan period. The rulers of the Pala dynasty not only gave political support to the development of Buddhism but through their architecture and visual arts, protected Buddhist philosophy for future generations.

3. Evaluate the policies of Lord Curzon and their long term implications on the national movements.

Approach

1. Introduce Lord Curzon and the nature of his policies in general (25 words)
2. Explain the policies and how they led to long term implications on national movement in India (100 words)
3. Conclusion (25 words)

Hints:

The time of Curzon's governorship (1899-1905), was the formative phase of Indian national movement. Thus he tried to strangle Indian nationalism and freedom movement by all fair and foul means.

A sharp reaction was created in the Indian mind by Curzon's seven-year rule in India which was full of missions, commissions and omissions.

Partition of Bengal 1905

- The Bengal had become too large to be administered as a single unit. To solve the problem, the Government partitioned Bengal on October 16, 1905 into two parts viz. Eastern Bengal and Assam and West Bengal (Western Part).
- But Curzon was not aware of its fallouts. It was different than dividing an American county for better administration.
- The decision stirred the Bengali patriotism. Congress escalated the issue as government conspiracy to divide Bengal from Bengali and break India into pieces.
- Further, it was also seen as an intrigue to divide Hindus and Muslims.
- The Boycott and Swadeshi movement were the result of this emotive issue and through these movements, the Indian people made a unique innovative experiment by linking political opposition with society and culture.
- People were aroused from slumber and now they learned to take bold political positions and participate in new forms of political work.
- The partition of Bengal paved the way for the creation of Muslim League and sowed the seeds of Partition of India.
- It also brought revolutionary nationalism to a climax and Bengal became the epicenter of revolutionary nationalism.
- Partition was later annulled in 1911 but it changed Indian political scenario forever.

Famine of 1899

- In 1899-1900, the areas of Agra, Oudh, Bengal, Central provinces, Central Provinces, Rajputana, Gujarat etc. came under the grip of a severe famine which claimed thousands of lives.
- The British initiatives were also grossly inadequate because no intervention was done to control the grain prices. There was no humanitarian consideration in the relief measures
- The Famine of 1899-1900 {Chappania Akal} played an important role to upsurge resentment against the colonial government.

Calcutta Corporation Act (1899)

- Through Calcutta Corporation act 1899 he reduced the number of elected legislatures to deprive Indians from self-governance.
- This was a major setback for moderate Congress leaders and they started realising the actual imperialist nature of government.

Punjab Land Alienation Act 1900

- The Curzon Government enacted the Punjab Land Alienation Act of 1900 which placed a 15 year limitation on all land purchases and mortgages.
- This act provided that the no non-peasant could buy lands from the peasants; and no one could attach the land for non-payment of debts.
- But due to this, peasantry got into further problems because now they were unable to access credit.
- Congress took it as an opportunity to criticize the government. It passed a resolution in the 1899 Lucknow session against these measures.

Indian Universities Act (1904).

- The Indian Universities and the colleges were slowly becoming a cradle of propaganda against the Government. To bring the universities under control, Lord Curzon appointed Raleigh Commission and according to this commission report passed Indian Universities Act 1904
- The Indian Universities Act made the universities and colleges completely under the Government control.
- The section of the students was very angry with this and they took part in the Swadeshi movement and became an integral part of India's freedom struggle.
- However, for better education and research a grant of Rs. 5 Lakh per year for 5 years was also accepted.
- This was the beginning of university grants in India which later became a permanent feature in the structure of India education.

The Indian Official Secrets Act, 1904

- The Indian Official Secrets Act, 1904 was enacted during the time of Lord Curzon and one of the main purposes of the Act was to muzzle the voice of nationalist publications.
- It was seen as an attack on freedom of speech and expression.

Attack on TIBET

- Lord Curzon launched an attack upon Tibet and send a mission under young husband.
- The nationalistic leaders saw this attack motivated by commercial greed and territorial aggrandizement.

Conclusion:

He was a great imperialist, authoritarian in temperament, ruthless in his ways and wanted to achieve too much at too great pace.

That is why his policy resulted in deep discontent and the upsurge of a revolutionary movement in the country and had long term implications on national movement.

4. Discuss the geophysical characteristics of Circum-Pacific Zone.

Approach

1. **Introduction about unique nature of circum- Pacific zone (25 words)**

2. Discuss the geophysical characteristics of circum-Pacific zone with examples (100 words)
3. Conclusion (25 words)

Hints:

Circum-Pacific Zone is a zone along the Pacific Ocean and is bordered by various tectonic plates like Juan de Fuca, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates.

The geophysical characteristics of circum-Pacific zone with examples.

- The overall shape of the ocean is triangular if its extent in both the hemispheres is considered separately. Average depth of the ocean is 4,572m. Both the coasts (east and west) of the Pacific are paralleled by the chains of folded mountains and therefore the descent from the coast to the abyssal plains is very steep. More or less uniform broad and extensive ocean floor is characterized by several swells, rises, sea mounts and depressions (trenches and deeps).
- There is significant difference in the extent and characteristics of continental shelves on the eastern and western coasts of the Pacific. The shelves are quite broad and extensive along the eastern coasts of Australia and Asia.
- The Ocean has the largest number of islands (more than 2,000). It may be pointed out that the western coast is studded with islands, island arcs and festoons while the eastern coast has only a few islands.
- Circum Pacific zone contributes to nearly 70% of earth's volcanoes which gave it the name "**Ring of Fire**" and around 90% of World's earthquake. Various island arc and oceanic trenches- Mariana trench (the deepest oceanic trench) are also found in this area. Such geophysical phenomena can be attributed to certain characteristics of this region.



- The lithospheric plate below the Circum-Pacific zone is always in transition which leads to the formation of above mentioned features. The plates in the region overlap each other at convergent boundaries creating subduction zones. Subduction zone is an area where a plate is overridden by the other and the plate underneath is pushed inside, where the rock melts due to the prevailing temperature creating magma. Abundance of magma creates pressure which is eventually released on the surface of the earth in the form of volcanoes.

- The part of the Circum-Pacific Zone where the plates slide past each other (Transform boundary) creating friction and tension which leads to the formation of earthquake.
- The above characteristics are the reasons which make this area a unique geophysical spot on the earth and home to various geophysical phenomena and features.

Conclusion:

Ring of Fire: the most dynamic place on Earth needs to be understood further through proper research and development to predict risk associated with ring of fire and it can be done through study of geophysical nature of Pacific region.

5. The process of desertification doesn't have climate boundaries. Justify with examples.

Approach

1. Introduction with facts on desertification. Define the process of desertification. (35 words)
2. Explain how the process of desertification does not have any climate boundaries. Specific examples to justify the arguments. (80 words)
3. Way forward to tackle desertification. (35 words)

Hints:

Some two billion people are affected by desertification and land degradation; 41 per cent of the landmass worldwide is prone to desertification.

Deserts are places on Earth that receive less than 10 inches (25 centimeters) of rainfall per year, whereas desertification is defined as "a type of land degradation in which a relatively dry land region becomes increasingly arid, typically losing its bodies of water as well as vegetation and wildlife" land use change, land-use intensification and climate change have contributed to desertification and land degradation. The climate change, including increases in frequency and intensity of extremes, has adversely impacted food security and terrestrial ecosystems as well as contributed to desertification and land degradation in many regions.

Major reasons for desertification in India



Water erosion

Responsible for **10.98%** desertification*

Loss of soil cover mainly due to rainfall and surface runoff. Water erosion is observed in both hot and cold desert areas, across various land covers and with varying severity levels



Wind erosion

Responsible for **5.55%** desertification

It denotes the spread of sand by various processes, even up to lofty altitudes of Himalayas. It removes the topsoil, which is rich in all plant nutrients and bacterial activities



Human-made/settlement

Responsible for **0.69%** desertification

All land degradation processes which are induced directly or indirectly by human intervention. It includes developmental activities such as mining and urbanisation



Vegetation degradation

Responsible for **8.91%** desertification

It includes deforestation, shifting cultivation and degradation in grazing, grassland and scrub land. Destruction of vegetation, most often by humans, accelerates desertification



Salinity

Responsible for **1.12%** desertification

Occurs mostly in cultivated lands, especially in the irrigated areas. Soil salinity refers to the water soluble salt present in soil. Salinity can develop naturally, or human-induced



Others

Responsible for **2.07%** desertification

They include water logging, frost shattering, mass movement, barren and rocky land types

[Desertification and Land Degradation, Atlas of India 2016 by ISRO](#)

* percentage figures for the period of 2011-13

The process of desertification does not have any climate boundaries - can be explained with examples.

- The drivers of land degradation vary with different locations, and causes often overlap with each other. In the regions of Uzbekistan and Kazakhstan surrounding the Aral Sea, excessive use of water for agricultural irrigation has been a primary culprit in causing the sea to shrink, leaving behind a saline desert.
- While in Africa's Sahel region, bordered by the Sahara Desert to the north and savannas to the south, population growth has caused an increase in wood harvesting, illegal farming, and land-clearing for housing, among other changes.
- While some natural climate cycles could partly explain reduced rainfall and desert expansion southward, human-driven climate change is also playing a part. Deserts in China, Mongolia and Africa are all invading their neighbouring regions.
- According to State of India's Environment 2017 nearly 30 per cent of India's land is degraded or facing desertification. Of India's total geographical area of 328.72 million hectares (MHA), 96.4 MHA is under desertification. In eight states—Rajasthan, Delhi, Goa, Maharashtra, Jharkhand, Nagaland, Tripura and Himachal Pradesh—around 40 to 70 per cent of land has undergone desertification.
- There is more to it, as 26 of 29 Indian states have reported an increase in the area undergoing desertification in the past 10 years. Rajasthan has the largest decertified land (23 Mha), followed by Gujarat, Maharashtra and Jammu and Kashmir (13 Mha each) and Odisha and Andhra Pradesh (5 Mha each).
- Aravalis is losing its ability to curb desertification. Natural forests are shrinking and green cover of a dozen gap areas (forested areas) that fill intervals in the rocky ranges in Haryana and Rajasthan has declined. These forested areas are important to keep the hills from turning barren and therefore, prevent desertification.

Conclusion:

Thus desertification is not just linked to climate boundaries but it is more a man-made process interlinked with natural climate cycle. So, curbing desertification is as critical as mitigating impact of climate change and international initiative on climate change and biodiversity loss should have linkages and synergies with steps against desertification. Many are not as aware of the impact of desertification as they are of climate change. UNCCD suggests that developing countries need to integrate their poverty eradication programmes with strategies to fight desertification. The soil and land preservation efforts should be prioritised and mainstreamed. The funds for climate change mitigation and adaptation could be linked to the anti-desertification programme.

6. How will the melting of Himalayan glaciers have a far-reaching impact on the water resources of India?

Approach

1. **Introduction about Himalayan glaciers (30 words)**
2. **Discuss about the Significance of Himalayan glaciers (40 words)**
3. **Discuss about melting of Himalayan glaciers. Assess its far reaching impact on water resources of India (60 words)**
4. **Conclusion (20 words)**

Hints:

The Himalayan region form the largest area of permanent ice cover outside of the North and South Poles, and so are often referred to as "Third Pole" World's third pole is 3,500 km long spread over 8 countries in South Asia and home to 10 major river basins is under severe threat of climate change. As

per the reports of Hindu Kush Himalayan Monitoring and Assessment Report (HIMAP) and International centre for Integrated Mountain Development (ICIMOD) even the most ambitious goal set by the Paris Agreement to limit global warming would lead to a 2.1 spike in temperature in the Hindu Kush Region, leading to melting of 1/3rd of the region's glaciers by 2100, potentially destabilizing Asia's rivers. The Himalayan Mountains are the third largest deposits of ice and snow in the world after Antarctica and the Arctic. The glaciers supply 800 million people with water for irrigation, hydropower and drinking.

Some of the significance of Himalayan glaciers:

- The most important resource provided by glaciers is fresh water. Many rivers are fed by the melting ice of glaciers.
- Glaciers are also responsible for digging basins for most of the world's lakes and carve much of the earth's mountain scenery.
- Ice acts like a protective cover over the Earth and oceans. It reflects excess heat back into the space and keeps the planet cooler.

Some of the far reaching Impacts of melting of Himalayan glaciers:

If the Green House Gas emissions continue at their current level, the region can lose up to 2/3rd of its ice. So, the amount of GHG emissions will determine the amount of glaciers melted in these mountainous ranges. The melting of these glaciers will put a threat on 1.9 billion people.

- Himalayan region is home to 4 global biodiversity hotspots, several important bird areas, and hundreds of mountain peaks. It provides ecosystem services (water, food, energy, etc) to nearly 2 billion people through its river basins. Melting of glaciers can be a threat to water and food security and increase the risks of disasters.
- Water supply in the region is closely dependant on rainfall during monsoon and trickling melt water from glaciers during dry season. Lower flows of river water due to glacial melting will cut power from hydro dams that generate much of the region's electricity.
- The melting of glaciers in the Himalayas will have varying impact on the waters of the Indus, Ganges, Brahmaputra, Yangtze and Yellow Rivers, according to a new Dutch research. Scientists believe that the changes in the flow of water due to global warming may have a "severe" impact on food security in some areas. However, they also point out that the people living elsewhere are likely to see an increase in food productivity.
 - Faster snow and glacier melting due to warming is already manifesting in formation of glacial lakes. Glacial lake outburst floods (GLOF) are becoming frequent and causing huge casualties and loss to local infrastructures.
 - Glaciers in Hindu Kush Himalayas have been retreating faster, and consistently causing greater water flows in rivers. In Tibetan Plateau, river run off has increased by 5.5 per cent. Most of the lakes in high altitudes have also reported water level rise by 0.2 m/year besides their surface areas expanding.
 - If glaciers melt, fixed deposit of snow goes down, thus causing drying of the springs.
 - Recent flash flood in Uttarakhand is result of breaking glacier caused by global warming.

Initiatives taken by India to tackle the causes of glacier melting

- International Solar Alliance (ISA) is an alliance of more than 122 countries initiated by India, most of them being sunshine countries, which lie either completely or partly between the Tropic of Cancer and the Tropic of Capricorn. The primary objective is to work for efficient exploitation of solar energy.
- India has already announced its much awaited post-2020 'climate action plan' promising to reduce emission intensity by 33-35% by 2030 over the 2005 levels, boost clean energy in electricity generation

to 40% while adding carbon sinks – tree and forest cover to remove carbon dioxide from the atmosphere – amounting to 2.5-3 billion tonnes of CO₂.

Conclusion:

Governments must focus on creating enabling environments and institutions that empower mountain people to share in the regional and global achievements and benefits of inclusive growth and sustainable development. Also we must focus on detailed research which is required to fully understand the state of glaciers and the risk their loss poses and measures to protect it.

7. Account for the present location of Iron and Steel industries away from the source of raw material, by giving examples.

Approach

1. Introduction about significance of iron and steel industry. (25 words)
2. Analyse the reasons behind its shifting away from its source of raw material (100 words)
3. Conclusion (25 words)

Hints:

The iron and steel industry is a basis for the development of a number of industries in the global economy: the Defence industry, transportation and heavy engineering, energy and construction (including aeronautical and shipping construction). At global level in 2018, the world crude steel production reached 1789 million tonnes (mt) and showed a growth of 4.94% over 2017. China remained world's largest crude steel producer in 2018 (928 mt) followed by India (106 mt), Japan (104 mt) and the USA (87 mt).

Reasons behind it are away from its source of raw material:

- **Near Coastal regions:** As iron and coal were depleted the need for imported coal and iron increased. This made factories to shift to newer areas in the coastal regions. The coastal factories depended on imported iron or coal and lowered cost of transportation from factory to port. Iron ore and coal producing regions have a bi-directional relationship. The wagons that transported coal to iron ore regions would return empty so un-economical use. Hence the wagons would return with iron ore towards the coal producing regions. Thus in both these areas iron and coal industries flourished. E.g: Pittsburg-Lake Superior, Bokaro-Rourkela.
- **Modern Technology:** New technologies available for steel production reduced the pull factor of coalmines. Modern technology such as electric smelters, open hearth system etc have helped in shifting steel industries away from coal and iron ore reserves by making efficient use of scrap metal and also reducing energy requirement. For example: Bhushan steel plant in Ghaziabad.
- **Oxygen converter process and electric smelters** used less energy and now such mini-steel plants can be located away from mines and towards cities. Mini Steel plants are located in Eastern India and have a high gestation period. They are integrated complexes with the entire process from raw material processing to final conversion into alloys and steel products being done. Mini Steel Plants are located near cities and they recycle waste steel to produce finished products. They avoid competition with integrated steel plants by locating away from them.
- **Strategic reasons:** After WWII, USA and USSR adopted a policy to not allow concentration of industries in one region. Thus in USA some plants were setup in western region such as California and USSR and some in the eastern side towards pacific coast. India too used licensing to locate industries in backward areas as they might promote development.

Conclusion:

Even after local coal-iron resources are depleted, the Iron and steel industries do not frequently shift their location because of Industrial Inertia and reasons like:

Labor is available abundantly and skilled in industrial areas. But if the industry moves to a newer location such labor might not be available.

Rail, road and transportation facilities towards markets and ports are well developed in the industrial locations. The same facilities aren't developed in newer locations and so it is more convenient to import raw materials and modernize operations.

Secondary industries don't shift even when the primary industry might move. So the entrepreneurs are dissuaded from shifting their locations as it might affect their market base.

8. *Has caste lost its relevance in understanding the multi-cultural Indian Society? Elaborate your answer with illustrations.*

Approach

1. *Introduce the significance of caste system in understanding Indian society (25 words)*
2. *Compare with past: how the role of caste is evolving with time .Cite contemporary examples to substantiate the relevance of the caste system (100 words).*
3. *In conclusion discuss the future of caste as sociological unit of analysis in changing society (25 words).*

Hints:

Famous sociologist David Mandelbaum has said that the key to understanding the Indian society lies in Indian Village, Joint Family and Caste system. This proves the importance of caste system as one of the most important dimensions to know the multi-cultural Indian Society.

Compare with past: how the role of caste is evolving with time

- With the breakdown of the closed village economy and the rise of democratic politics, the competitive element embedded in caste has come to the fore. This has eroded the role of caste as a system of economic interdependence and social coercion.
- With the advent of Indian Constitution and the inception of democratic polity in India, two opposing socio-political phenomena occurred. First, the modern technological education and economic activities inculcated into the society which eroded the role of caste and second, it gave rise to the subaltern assertion.

Caste relevance in the contemporary society with examples

- Many scholars thought that the caste system will fade out in background. But on the contrary, it proves itself to be quite adaptive and responsive to changing socio political environment.
- The democratization has resulted in caste politics which has further led to the politization of the caste consciousness.
- Caste has emerged as a pressure group having roles in many contemporary agitations viz. Jat agitation, Patel agitation, etc.
- It is now acting as a welfare unit providing free coaching, residential facility, scholarship, etc.
- Nowadays, the caste identity has strengthened itself in contemporary times as seen in various Dalit literatures, Cinema such as Sairat, Media such as National Dastak.
- Furthermore, the alternative Indian history, which was introduced by Jyoti Rao Phule, can be seen as gaining traction in the political sphere.
- Also, the subaltern society has provided itself an economic platform viz. the Dalit Indian Chamber of Commerce and Industry which was founded in 2005 by Milind Kamble.
- Further, many caste icons have come to the fore such as Savitri Phule, Shahuji Maharaj, and most importantly, Dr. Ambedkar.

- Even among Muslims, a social reform dedicated to the emancipation of the Dalit Muslims, called Pasmanda movement, can be observed.

Conclusion:

In the contemporary Indian society, a basic shift took place in caste; from ritual hierarchy to identity politics, from ascribed and designated status to negotiated positions of power, from ritual definitions of roles and positions to civic and political definitions of the same. The caste system eroded at the ritual level, but emerged at the political and economic levels. Therefore, the importance of the caste system in understanding the Indian society cannot be ruled out at present and in future.

9. COVID-19 pandemic accelerated class inequalities and poverty in India. Comment

Approach

1. Briefly introduce with exacerbated several inequalities and poverty due to COVID-19 pandemic (25 words)
2. Discuss how COVID-19 accelerated class inequalities and poverty in India (70 words)
3. Suggest measures. Conclusion (55 words)

Hints:

The COVID-19 pandemic is a great leveler. Unlike tuberculosis, which is largely regarded as a poor man's disease, COVID-19 has affected everyone, irrespective of their social or economic status. It has, however, also exacerbated several inequalities.

COVID-19 accelerated class inequalities

- **Inter- and intra-state disparities:** In India, there are significant inter- and intra-state disparities. Rural-urban differentials are also severe. For instance, there is a huge skew in the distribution of doctors working in urban and rural areas, with the urban to rural doctor density ratio being 3.8:1.
- In terms of availability of hospital beds, states like Bihar are well below the national average of 0.55 beds in the public sector per 1000 population while others like West Bengal (2.25 beds/1000) and Sikkim (2.34 beds/1000) have considerably more.
- The union government has been providing supplementary resources as well as offering free testing and treatment for COVID-19 to 50 crore beneficiaries of the Pradhan Mantri Jan Arogya Yojana through empaneled laboratories and hospitals in the private sector, in addition to government facilities. However, at a time when the entire country is amidst an outbreak of a highly contagious illness, underlying health system inequalities are undoubtedly intensified.
- **Gender inequality:** With work-from-home guidelines issued by private companies and a strictly enforced social distancing policy, families are at home with kids, without any help from nannies or cooks.
- Women, with full-time paid employment, will now also end up executing most of the household chores like cooking, cleaning, and childcare. This would result in many women working with reduced efficiency because of the additional and disproportionate share of the workload.
- Further, there are concerns of rising domestic violence and sexual abuse. It is well-known that many crimes against women are carried out by people close to them, often in their own homes. Due to social distancing, it has become even more difficult for women to report their experiences and seek help.
- **Migrants:** Differential safe passage arrangements for international and domestic migrants and differential quarantine facilities for different socio-economic strata have their roots in a society stratified by caste, class, gender and ethnicity.

- **Access to education:** The access to education, for instance, is becoming more challenging for children from poorer households. For a majority of Indians, digital learning is still not a viable option. Even though the mobile phone and internet penetration has been quite rapid and high over the last few years, the digital divide is still quite significant.
- The children from poor households that will lose out on vital access to education as long as the pandemic continues will hardly see an improvement in their conditions after that. These children will witness their households slide further into poverty over the coming year.

COVID-19 accelerated class inequalities and poverty

- The World Bank has noted that India is at risk of losing many of its hard-won gains against poverty. In its 2020 India Development Update in July, the World Bank noted that half of India's population is vulnerable with "consumption levels precariously close" to the poverty line.
- India's most vulnerable are moving from poverty to hunger. In 2019, 14.5 percent of India's population – 195 million people – were malnourished, largely due to extreme inequality. An OXFAM India survey found that half of the rural households were having to cut back on their meals five weeks after the Indian government instituted a 21-day lockdown.
- Following the COVID-19-induced economic disruptions, millions jobs have been lost and million people pushed back into poverty in India, all of which have a hit on consumer income, spending and savings, says a report.
- Poverty alleviation received a set-back, significantly changing the fortunes of many, putting people into poverty and some into abject poverty.

Suggestion

- Strengthen the "safety net" significantly for the most vulnerable: The government could consider expanding the scale and duration of direct benefits for the poor by transferring an additional INR 15,000 to INR 18,000 per head to 300 million Indians under the Prime Minister's Garib Kalyan Yojana (welfare-for-the-poor plan) and providing other forms of support such as universalizing social security, increasing the monthly pension payout for senior citizens to INR 1,000 per month, and universalizing healthcare
- **Enable survival of small and medium businesses:** Provide direct assistance covering 70% of the payroll of small businesses, with a Small Business Corpus of USD 60 billion.
- **Restart the rural economy:** Increase the maximum support price of critical crops, particularly priority cereals and pulses, and boost the funding and scope of the employment guarantee to all rural districts.
- **Provide targeted assistance to at-risk sectors:** The government should devise sector-specific "rescue and revival packages" structured as five- to eight-year convertible loans for several capital and labor-intensive sectors such as manufacturing, retail, hospitality, healthcare, travel and automotives.
- With a focus on export-oriented industries such as pharmaceuticals, electronics, renewables, medical devices, food processing, electricals, precision components, heavy engineering, chemicals and textiles, a renewed push should be made to attract investments and improve the ease of doing business.
- **Accelerate Digital India and innovation:** We propose that the government catalyze a "Digital Team India" initiative along with leading global technology leaders and select local players to implement digital collaboration and cyber security solutions for Indian companies.
- The government could accelerate deployment of high-speed fiber-based broadband and accelerate India's transition to 5G.

Conclusion:

The country needs to work towards reducing the vast inequality in education access, health facilities, livelihood opportunities, etc. to prevent accentuating its societal inequality in the future.

10. Do you agree that regionalism in India appears to be a consequence of rising cultural assertiveness? Argue.

Approach

1. Briefly introduce the regionalism (25 words)
2. Show the historical relationship between regionalism and cultural assertiveness with illustrations. Regionalism due to other factors. (100 words)
3. Conclusion (25 words)

Hints:

Regionalism is a feeling of pride and loyalty that people belonging to a region have. It is sometimes associated with a feeling of superiority of belonging to one region as compared to those belonging to other regions. It is regional loyalty in place of national loyalty. It gives rise to the regional autonomy and in extreme case, the demand for the creation of a separate state. It favors the son of soil theory.

Relationship between regionalism and cultural assertiveness with illustrations.

- Generally, having pride in one's way of life is not a bad thing and it works under the aegis of the larger national sentiment. It instills confidence in the local community and plays an important role in bringing out the positive developments in the socio-economic conditions. But whenever the other factors are also there such as if there is perceived threat on the cultural identities, political dissatisfaction, and discontent in the socio-economic conditions of the regional community, it becomes more assertive in nature. For example, local Marathi people against non-Marathi's, Gorkhas against mainstream Bengalis, Bodoland territorial region in Assam, etc.
- There are many aspects of culture such as language, religion, and ethnicity which have given rise to regionalism and demand for the new states. For example, many states have been formed on the basis of language after Independence. There were demands of separatism in erstwhile State of Jammu and Kashmir for the three major religions. Despite not having the same language, there has been demands for the creation of a Greater Nagaland based on the common ethnicity. Likewise, there was the demand for the adoption of NRC in Assam, based on religion and language.
- It is important to note that regionalism is both the effect and feedback to the culture assertiveness. The regional politics usually strengthen the feeling of the cultural regionalism. It eventually gives rise to the extreme feeling of the assertiveness which ultimately becomes exclusionary. Due to this, secessionism, separatism, and violence to people from other religious, linguistic, and ethnic groups are the results. For example, people from north-east India and from East India were targeted in Bangalore and Mumbai respectively.

On other hand, other factors also play equal important role.

- **Political Factors:**
- India's politics and its political parties showcase the regionalism present in our country. They are broadly divided into: National Parties and Regional Parties.
- National parties have a strong hold in many states. Their work is based on an all India agenda. For Example, The Congress and Bharatiya Janata Party (BJP)

On the other hand, the Regional parties are mostly confined to a single state. They work based on the interest of the state. For Example, Trinamool Congress in West Bengal and Shiv Sena in Maharashtra.

Political aspirations of leaders remain a major source of regionalism. For example, regional political parties have used the regional and linguistic identities to secure votes. They have created an imaginary threat from outsiders and promise their vote bank for securing their land for themselves and to eliminate outsiders. Regional parties and fringe elements in various states have campaigned for this agenda.

Economic Factors:

- Economic factors also contribute to the development of regionalism. For example, some states and regions are better in terms of development like infrastructure, healthcare, job opportunities etc. These economic factors cause inequality problems between regions. For example, the formation of states like Jharkhand and Telangana were based on lack of development. The problem of Naxalism has its roots in economic deprivation of people belonging to this region.

Conclusion:

Regionalism in India is rooted in India's diversity of languages, cultures, tribes, and religions. It is also encouraged by the geographical concentration of these identity markers in particular regions, and fueled by a sense of regional deprivation. The cultural assertiveness is one of the factors of the regionalism in India along with regional politics, economic deprivation and unsatisfaction. There has been a long history of regionalism as a tool for the political assertiveness which poses a threat to the national integration in India if it becomes exclusionary.

11. Indian Philosophy and tradition played a significant role in conceiving and shaping the monuments and their art in India. Discuss.

Approach

- 1. Introduce Indian philosophy and tradition influencing Indian art (20 words)**
- 2. Examine the areas where Indian philosophies and traditions have influenced monuments and art in India. Give examples (180 words)**
- 3. Conclusion (50 words)**

Hints:

Since time immemorial, Indian art has been inspired by Indian philosophy and its traditions

Influence of Indian philosophy and traditions on Indian art

- Influence of different religions like Hinduism, Buddhism, Islam and Christianity is profoundly evident in Indian art
- Buddhism is one of the ancient religions to bestow its influence on Indian art as seen in the stupas and chaityas.
- The temple architecture of the Chola and Chera dynasty and the Rajasthani School of Painting of the Rajput period reflect the influence of Hinduism. Stories from Mahabharata, Ramayana, Geet Govind, Puranas have influenced not just the visual arts like architecture and paintings and tribal paintings like madhubani, Tanjore, Pattachitra etc but also performing arts.
- Classical dances of India like Kathakali, Manipuri dance etc are inspired from stories of Ramayana and Mahabharata.
- India has always been the abode of multiple religions and cultures and thus it has as well experienced the impact of Islam during the Mughals. Christianity also has a significant role in the moulding of Indian art.
- Mughal influence was another significant milestone in the evolution of Indian art forms. They were an imperial power and induced considerable indo-Islamic-Persian influence on the various styles of Indian art. Example jail work of Sidisayyed mosque.
- The Taj Mahal and the city of Fatehpur Sikri are the magnificent examples of the Mughal architecture. Finally it is the British invasion that affected Indian art form. It was marked by construction of Victoria memorial, Madras high court etc in Indo saracenic style.

Conclusion:

Thus it can be seen that India is melting pot of various cultures and thus the philosophy of these different cultures is reflected in the artistic and cultural history of India. This has enriched India cultural landscape and given it a unique place in the world.

12. Persian literary sources of medieval India reflect the spirit of the age. Comment.

Approach

1. Introduce Persian language and how it came into India (50 words)
2. Explain how Persian literary sources reflect the spirit of Medieval India (150 words)
3. Conclusion (50 words)

Hints:

There were some important changes in language and literary trends in the medieval period and the Persian language's appearance was one of them.

Although the roots of Persian language are as old as Sanskrit, it came to India with the coming of Turks and Mongols in the twelfth century and became the mode of communication of the court.

1. Persian literary sources composed in the form of history

- In the Delhi Sultanate, multiple texts were written in Persian. Most of them were concerned with creating histories for the rulers.
- Zia-ud din Barani is amongst the top historians of that period and he wrote Tarikh-e-Firuz Shahi. It gives political insight of that time.
- Mughal emperor Babar wrote Tuzuk-I-Babari in Turkish, which is his autobiography and gives us important information about the Mughal conquest of India.
- One of the greatest Persian literary sources about the period of Jahangir was Tuzuk-I-Jahangiri.
- Another important work is Humayun-nama which gives an account of his life and struggles to get the throne, written by half-sister of Humayun, Gulbadan Begum.
- The greatest emperor of this period was Akbar and Ain-e Akbari and Akbarnama written by his court historian AbulFazl, are the best examples of literature of this period.
- These Persian literary sources give detailed accounts of the organisation of the court, administration and army, the sources of revenue and the physical layout of the provinces of Akbar's empire and the literary, cultural and religious traditions of the people.
- Along with a description of the various departments of Akbar's government and elaborate descriptions of the various provinces (subas) of the empire, the Ain-e-Akbari gives intricate quantitative information of those provinces.
- Akbar ordered several translations of Sanskrit texts like Ramayana, Bhagwata Gita and several Upanishads into Persian.
- Padshahnama was written by Abdul Hamid Lahori. It is about Shah Jahan.
- Although military campaigns are given the most prominence, the illustrations and paintings in the manuscripts of Padshahnama illuminate life in the imperial court, depicting weddings and other activities.
- The Mahabharata was translated into Persian in this period called Razmnama.

2. Other Persian literary sources

- The most important work of this period in which the tableau of the then folk life is found is the epic Padmavat of the Malik Mohammad Jaisi.

- One of the finest Persian poets is Amir Khusrau Dehlavi (Amir Khusrau of Delhi). Apart from his Diwan (collection of poetry in Persian), he also wrote Nuh Sipihr and the Masnavi Duwal Rani Khizr Khan, which is a tragic love poem.
- There are several travel accounts written by famous travellers like Ibn Batuta (Moroccan traveller) that explain the socio-political scenario of the period.
- One of the highly illustrated works from this period is called Hamzanama, which depicts the story of the mythical Persian hero, Amir Hamza.
- Other major writers of this period include Badauni, who wrote on ethics of political rule and Faizi who was considered a master of Persian poetry.
- Several texts were produced in the period of Shah Jahan, especially about the emperor like the Shah Jahan-nama of Inayat Khan.
- In Aurangzeb's period, several satirists like Mir Jafar Zatailli wrote their Kulliyat (collection of verses). Texts like Tabqat-i-Alamgiri give us a good idea about the period of the eighteenth century.

Conclusion:

A literature can be called the spirit of that time when it shows all the achievements and failures of that time and present the lively form of society to the reader.

Persian literature composed in the medieval period meets all these standards.

13. Since the decade of the 1920s, the national movement acquired various ideological strands and thereby expanded its social base. Discuss.

Approach

1. ***Introduce the scenario of the decade of 1920 (50 words)***
2. ***Explain various ideologies that developed during 1920s and how it helped in expanding the base of the movement (150 words)***
3. ***Conclusion (50 words)***

Hints:

By the end of 1920, political activities had started intensifying. Opposition to Rowlatt Act, Khilafat Movement, and Non-Cooperation Movement, as well as the issues of farmers, laborers, religious groups and deprived sections of society, were making a place in the political sky.

This led to the inclusion of many ideologies and new social classes in the national movement.

- Rise of the **left wing** was the most important feature of this decade.
- **The communist party of India was established in 1925** and the main leader of it was M N Roy.
- The process of the disparate groups of workers in various parts of the country emerging as an organized, self-conscious, all India class is inextricably linked with the growth of the Indian national movement and left parties were facilitators of this process.
- Left ideology stressed the need to combine nationalism and anti-imperialism with social justice and simultaneously raised the question of internal class oppression by capitalists and landlords.
- Another **right wing organisation like RSS was also founded in 1925** by Keshav Baliram Hedgewar, which asserted Hindu identity in the form of hindutva.
- It was the second important right wing organisation after **Hindu Mahasabha** and they weaved the concept of Indian independence around religion.

- Various socio-religious movements also took place during the 1920s that made the Indian national movement more inclusive.
- The Akali movement, also called the **Gurdwara Reform Movement**, was a campaign to bring reform in the gurdwaras during the early 1920s.
- The movement led to the introduction of the **Sikh Gurdwara Bill in 1925**, which placed all the historical Sikh shrines in India under the control of Shiromani Gurdwara Parbandhak Committee (SGPC).
- It was only during the Akali movement that the pro-British feudal leadership of the Sikhs was replaced by educated middle-class nationalists and the rural and urban classes united on a common platform during the two-pronged Akali struggle.
- The Akali Movement also awakened the people of the princely states of Punjab to political consciousness and political activity hence helped to expand the Social and political base of national movement.
- In 1923, the Congress decided to take active steps towards the eradication of untouchability. The basic strategy it adopted was to educate and mobilize opinion among caste Hindus on the question.
- The struggle against untouchability and for the social and economic uplift of the depressed classes continued all over India in this decade as a part of the Gandhian constructive programme.
- The nationalist challenge in this respect came to be symbolized by two famous struggles in Kerala. Vaikom and Guruvayur Temple Satyagraha.
- Leaders of these movements were **K Kelappan**, **E.V. Ramaswami** Naicker (popularly known as Periyar later), **E.M.S. Namboodiripad** etc.
- The **temple entry campaign** used all the techniques developed by the Indian people in the course of the nationalist struggle.
- Its organizers succeeded in **building the broadest possible unity, imparting mass education, and mobilizing the people on a very wide scale** on the question of untouchability and further align them with freedom struggle.
- Peasant discontent against established authority was a familiar feature of the nineteenth century.
- But in the second and third decades of the twentieth century, the movements that emerged out of this discontent were deeply influenced by national movement.
- The national movement also took inspiration from these peasant movements and expanded its Social base.
- The **Kisan Sabha and Eka movements** in Avadh in U.P., the Mappila rebellion in Malabar and the Bardoli Satyagraha in Gujarat are examples of these kind of movements.

Conclusion:

The rising tide of nationalism and democracy inevitably began to overflow from the political to the religious and social fields affecting the downtrodden castes and classes and change the public opinion to issues which affected the internal structure of Indian society.

By these movements of different sections of the society, raised their voices and the national movement of freedom struggle acquired various ideological strands and thereby expanded its social base.

14. The interlinking of rivers can provide viable solutions to the multi-dimensional inter related problems of droughts, floods and interrupted navigation. Critically examine.

Approach

1. Introduction about Interlinking of rivers. (40 words)

2. Discuss about the significance and challenges of interlinking of rivers. (50 words)
3. Discuss how it can provide viable solutions to the multi-dimensional inter related problems of droughts, floods and interrupted navigation. (130 words)
4. Conclusion (30 words)

Hints:

The interlinking of river project is a Civil Engineering project, which aims to connect Indian rivers through reservoirs and canals. The farmers will not have to depend on the monsoon for cultivation and also the excess or lack of water can be overcome during flood or drought.

All interlinking schemes are aimed at transferring of water from one river system to another or by lifting across natural basins. The project will build 30 links and close to 3000 storages to connect 37 Himalayan and Peninsular rivers to form a gigantic South Asian water grid.

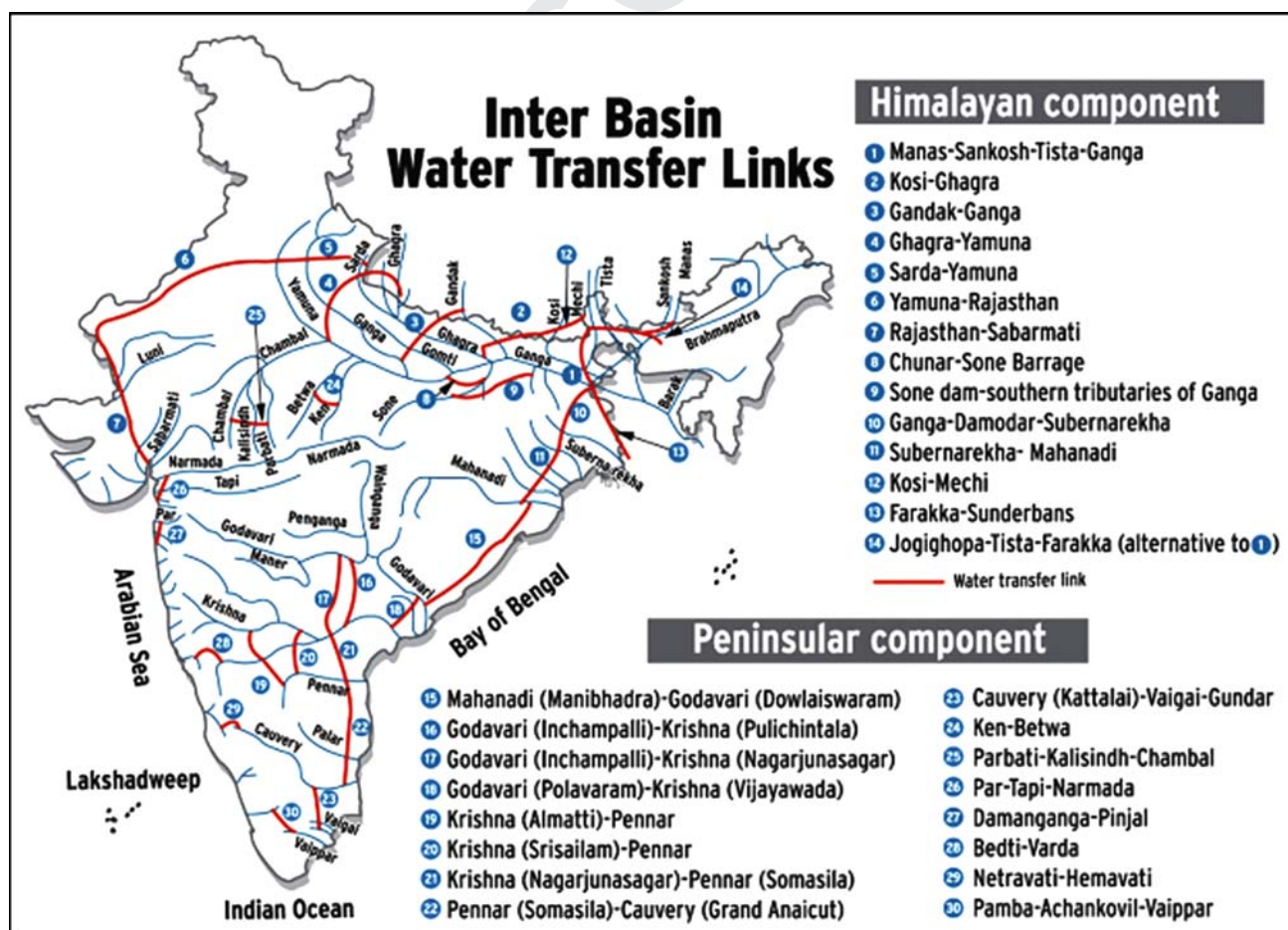
The Himalayan section has 14 links, and is expected to transport 33,000 giga litres of water per year. The peninsular component has 16 links and will transport 141,000 giga litres per year.

The interlinking of rivers has two components: **the Himalayan and the Peninsular**. Many large-scale water transfer schemes have been planned and implemented in other countries also.

South-north water transfer project, China : An ambitious plan to link Yangtze river basin in the south with the yellow river basin in the north, construction of the South-north water transfer project (SNWTP) began on 2002.

Significance:

India receives most of its rain during monsoon season from June to September, most of it falls in northern and eastern part of India, the amount of rainfall in southern and western part are comparatively low. It will be these places which will have shortage of water. Interlinking of rivers will help these areas to have water throughout the year.



This will cut farmers dependence on monsoon rains by bringing millions of hectares of cultivatable land under irrigation.

Crop productivity would increase and so would revenues for the State.

Even one bad monsoon has a direct and debilitating economic impact.

The river linking project will ease the water shortages in western and southern India while mitigating the impacts of recurrent floods in eastern India.

Viable solutions it can provide to the multi-dimensional inter related problems of droughts, floods and interrupted navigation are:

- Inter Basin Water Transfers is necessarily required to overcome the water scarcity and flooding situations in the regions/basins. These are needed to enhance water utility and reduce water wastage of water surplus areas in the following manner:
- As most of the Himalayan rivers are fed by glacier melt and those in peninsular India are rain-fed, those two components face different water supply constraints. The Himalayan section depends on stable rates of glacial formation and melt, while the peninsula component depends on steady monsoon events. The scheme broadly envisions transporting water from the relatively wet north-west of the country to the drier east.
- The Ganga Basin, Brahmaputra basin sees floods almost every year. In order to avoid this, the water from these areas has to be diverted to other areas where there is scarcity of water. This can be achieved by linking the rivers. There is a two way advantage with this – floods will be controlled and scarcity of water will be reduced.
- The Ken-Betwa link, another project that is close to being started, involves the construction of a 231 kilometre canal to transfer water from the Ken to the Betwa river. It will provide water to the drought-prone Bundel khand region between Madhya Pradesh and Uttar Pradesh.
- The aim is to conserve monsoon flows for irrigation and hydropower generation, along with flood control.
- The linkage will transfer surplus flows of the Kosi, Gandak and Ghagra to the west. A link between the Ganga and Yamuna is also proposed to transfer the surplus water to drought-prone areas of Haryana, Rajasthan and Gujarat.
- The river interlinking scheme was launched as a solution to the persistence of hunger and water insecurity in Indian society. It is hoped that the transfer of water from surplus areas to regions with a water deficit will increase Indian food production and lower food insecurity.

Mahanadi-Godavari link project

- NWDA reported that Godavari and Mahanadi river basins are water surplus basins. The joint surpluses water of these basins after accounting in basin uses in closing stage of improvement can be transferred to fulfill the water requirement of water deficit basins in South upto river Gundar via Mahanadi-Godavari-Krishna-Pennar-Cauvery-Vaigai-Gundar river linkages. According to the Government of Odisha surveys, the proposed dam turned into having submergence of 59,400 ha.

Interlinking of rivers for navigation:

- The involves a large-scale engineering intervention to shift water from the Brahmaputra and lower Ganga basins in eastern India to water scarce regions of western and central India through the construction of reservoirs, dams and over 14,000 kilometres of canals. The project aims to balance uneven water flow in different river basins.
- The project has invited the wrath of environmentalists who fear that linking rivers would lead to an irreversible ecological disaster.

- The large scale movement of cargo, ships and barges can only happen once inter-river connectivity and routes are in place. Conservationists point to the government's nonchalant attitude towards river dynamics while planning such projects.
- "Every river has its own character which needs to be respected. To give just one example, mixing of water from one polluted river with another less polluted river can have serious consequences corrupting the entire system,"

Conclusion:

Interlinking of rivers has its pros and cons, but given the economic, political, and environmental implications, it may not be a wise decision to carry out this project at a centralized national level. Instead, interlinking of rivers may be pursued in a decentralized manner, and more sustainable ways like rainwater harvesting should be promoted to mitigate floods and droughts.

15. Account for the huge flooding of million cities in India including the smart ones like Hyderabad and Pune. Suggest lasting remedial measures.

Approach

1. *Introduction about recent urban flooding in India. (40 words)*
2. *Discuss reasons and impact for urban flooding in million plus cities. (140 words)*
3. *Suggest remedial measures and way forward for urban flooding. (70 words)*

Hints:

- Flood is defined as "an overflow of a large body of water over areas not usually inundated". Thus, flooding in urban areas is caused by intense and/or prolonged rainfall, which overwhelms the capacity of the drainage system.
- The coastal urban flooding is a complex phenomenon which may occur in various forms such as: urban flooding due to high intensity rainfall; due to inadequate drainage and flooding caused by overtopping in the channels or rivers; flooding due to high tides, etc. A 2016 UN report estimated that 40 million people in India will be at risk from sea-level rise by 2050.

Reasons for Urban Flooding in million plus cities.

- Urban flooding is caused by three main factors – meteorological, hydrological and human factors.
 - **Meteorological factors** include heavy rainfall, cyclonic storms and thunderstorms.
 - **Hydrological factors** include presence or absence of overbank flow channel networks and occurrence of high tides impeding the drainage in coastal cities.
 - **Human factors** include land use changes, surface sealing due to urbanization (which increases run-off), occupation of flood plains and obstruction of flood flows, urban heat island effect (which has increased the rainfall in and around urban areas), etc.
 - Water logging. — a prelude to urban flooding — is a common sight in urban India during the monsoon. Urban flooding has also become increasingly common, as the changing weather pattern resulted in more high intensity rain in fewer rain days. While this was initially seen only in cities like Mumbai and Delhi now the scourge has been extended to smart cities like Hyderabad and Pune which have a high ease of living index performance
- **Urbanisation:** Rapid urbanization combined with a lack of efficient waste disposal systems have left several water bodies in the cities in poor condition. Blocked waterways and reduced width and depth of canals, while the speed and scale of construction reduces the permeability of the ground.

- **Improper Drainage:** In Indian cities and towns, large habitations are coming up in low-lying areas, often encroaching over drainage channels. Encroachment in the immediate upper catchments of hilly urban area has also caused serious flooding in the flood plains of cities surrounded by hills.
- **Population Growth:** Most of our cities have now reached a saturation point in terms of population growth and accommodation, and the developmental activities have now shifted to low-lying areas and areas next to the riverbanks. So, whenever a city experiences a large amount of rainfall within a short time, there are chances it gets flooded.

Impact of the devastation due to floods:

- **On economy:** Damage to infrastructure, roads and settlements, industrial production, basic supplies, post disaster rehabilitation difficulties etc.
- **On human population and wildlife:** Trauma, loss of life, injuries and disease outbreak, contamination of water etc.
- **On environment:** Loss of habitat, tree and forest cover, biodiversity loss and large scale greenery recovery failure.
- **On transport and communication:** Increased traffic congestion, disruption in rail services, disruption in communication- on telephone, internet cables causing massive public inconvenience.

Measures to address urban flooding in India:

- **Water-Sensitive Urban Design and Planning (WSUDP) and a green infrastructure approach for storm water management:** Identification, protect and use of open spaces and water bodies as critical green infrastructure to manage run-off and mitigate urban flooding. This must be done in addition to identification of urban catchments and prioritisation based on level of risk and vulnerability.
- **Drainage Infrastructure:** Prepare drainage master plans for cities with short-, medium-, long-term and periodic strategies to augment storm water infrastructure in cities. This must be aided by state-of-the-art urban watershed modelling.
- **Identifying Risk Prone Areas:** Identify vulnerable and high-risk areas and prepare monsoon action plans for those areas, based on context. Informal areas are more vulnerable due to high built-up area density and lack of infrastructure. This needs to be aided by a state-of-the-art rain atlas for cities, providing spatial rainfall maps with 15-minute intervals.
- **Urban Storm water Management:** Formulate a nodal authority for urban storm water management which should be responsible for preparation of drainage master plan at the local level and coordinate strategies with city master plan preparations.
- **Utilising International best practices:** Implementing 'Mobile Walls' like in Germany, and 'sponge' cities in line with cities in China which involves replacing concrete pavements with porous pavements to ensure better filtration.
- **National Disaster Management (NDMA) Guidelines:** In 2010, NDMA had issued guidelines on Urban Flood Management in India -to create a National Hydro-meteorological Network for providing early warning, use of Doppler Weather Radars to be expanded to cover all urban areas in the country, an inventory of the existing storm water drainage system to be prepared etc.
- **Rainwater Harvesting:** Due to urbanisation, groundwater recharge has decreased and the peak runoff from rainfall and consequent flooding has increased. It will serve the twin purposes of lowering the peak runoff and raising the ground water table. Many municipal corporations in India have already made rainwater harvesting compulsory.

Way Forward:

- It is important to note urbanisation is an inevitable process and urban areas will continue to grow demographically and spatially. Hence, all existing and new developmental programmes and projects shall incorporate disaster resilient specifications in design and construction.
- Mumbai launched a state-of-the-art Integrated Flood Warning System (IFLOWS) in June, 2020. The warning system helps identifying imminent floods due to high rainfall or cyclones.
- The Chennai Flood Warning System – that provides spatial flood warnings for the city – was launched in October 2019.
- These systems help build resilience and can inform the public and authorities regarding risks. The India Meteorological Department launched the Mausam mobile application that provides rain forecasts including warnings.
- The Karnataka government launched the Meghasandesha mobile application, which provides real-time rainfall measurements, along with forecasts for rain, flooding and thunderstorms for capital city Bengaluru.
- While these measures look good on paper, they must be followed through by effective implementation, taking operation and maintenance and coordination with stakeholders including architects, planners, hydrologists, groundwater experts, etc, into account.
- These strategies must be prepared and implemented with the support and contribution of and the local community.

16. India has immense potential of solar energy though there are regional variations in its developments. Elaborate.

Approach

1. **Introduction about significance of solar energy. (40 words)**
2. **Discuss the immense potential of solar energy in India. Discuss the regional variations in solar energy. (170 words)**
3. **Way forward. (40 words)**

Hints:

Life on earth is heliocentric as most of its energy is derived from the sun. Imminent climatic changes and the demand for clean energy sources have induced significant global interest in solar energy. It has been observed that, solar as viable alternative for power generation among the available clean energy sources has the highest global warming mitigation potential.

Solar energy incident on the earth's surface, also called as insolation primarily depends on parameters like geographic location, earth-sun movements, tilt of the earth's rotational axis and atmospheric attenuation due to suspended particles.

The immense potential of solar energy in India and regional variations.

- India is one of the best recipients of solar energy due to its favourable location in the solar belt (40°S to 40°N). The National Solar Mission (NSM) launched in January 2010 has given a great boost to the solar scenario in the country. But due to the geographical expanse of the country there are seen regional variations in the development of this renewable energy resource.
- Annual radiation of solar energy is highest in northern region, especially in Ladakh and least in the North-Eastern Region. Some areas of Gujarat, Rajasthan, Madhya Pradesh, Andhra Pradesh and Maharashtra also receive a large amount of solar radiation as compared to other areas of India.

- The solar radiation level receives lowest in some parts of Arunachal Pradesh and Sikkim. According to Ministry of Power Uttar Pradesh, Maharashtra, Andhra Pradesh, Tamil Nadu and Gujarat will be the major producer of solar energy by the year 2022 due to the high solar potential, irradiation etc. available in these states.

State wise Estimated Solar Power Potential	
Total Solar Power in GWp:	748.98 GWp
State	Solar Potential (GWp)
Andhra Pradesh	38.44
Arunachal Pradesh	8.65
Assam	13.76
Bihar	11.20
Chhattisgarh	18.27
Delhi	2.05
Goa	0.88
Gujarat	35.77
Haryana	4.56
Himachal Pradesh	33.84
Jammu & Kashmir	111.05
Jharkhand	18.18
Karnataka	24.70
Kerala	6.11
Madhya Pradesh	61.66
Maharashtra	64.32
Manipur	10.63
Meghalaya	5.86
Mizoram	9.09
Nagaland	7.29
Orissa	25.78
Punjab	2.81
Rajasthan	142.31
Sikkim	4.94
Tamil Nadu	17.67
Telangana	20.41
Tripura	2.08
Uttar Pradesh	22.83
Uttarakhand	16.80

- Seeing the potential of solar hotspot regions in the country, recently the government has dedicated a solar power plant to the country in **Rewa, Madhya Pradesh**. It has been acknowledged in India and abroad for its robust project structuring and innovations. It has also received World Bank Group President's Award for innovation and excellence.

Conclusion:

India due to its geographical advantages can harness a tremendous amount of solar power but for that it requires huge technological advancement and financial support. Organisation like International Solar Alliance can help India become a major player in generating solar power. With an ambitious solar mission, and positively evolving policy instruments, the nation will rightly adorn the epithet of 'Solar India' in the near future.

17. Examine the status of forest resources of India and its resultant impact on climate change.

Approach

1. Introduction about importance of forest resources in India. (40 words)
2. Discuss the face of forest resources of India. Impact on climate change. (170 words)
3. Conclusion. (40 words)

Hints:

Forests play an important role in the socio-economic development of a country like India. They are rich sources of energy, housing, firewood, timber and fodder and they provide employment to a large section of the rural population. The recorded forest area in India is about 76.5 million ha (23% of total land mass).

The status of forest resources of India

According to the 16th India State of Forest Report (ISFR) the total forest and tree cover of the country is 80.73 million hectare which is 24.56 percent of the geographical area of the country. Area-wise Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. In terms of forest cover as percentage of total geographical area, the top five States are Mizoram (85.41%), Arunachal Pradesh (79.63%), Meghalaya (76.33%), Manipur (75.46%) and Nagaland (75.31%). The total mangrove cover in the country is 4,975 sq. km. An increase of 54 sq. Km in mangrove cover has been observed. Top three states showing mangrove cover increase are Gujarat (37 sq. km) followed by Maharashtra (16 sq. km) and Odisha (8 sq. km).

The report presents a gloomy picture of the forests in North Eastern States. The forest cover of six states, excluding Assam, has decreased by nearly 18 per cent between 2011 and 2019.

But there are regions which are under the brunt of deforestation due to development initiatives like the expansion of the Talabira coal mine in Odisha, requires the cutting of over 130,000 trees.

Impact on Climate Change

- Trees remove carbon dioxide from the atmosphere through photosynthesis. Cutting down forests will cause a decline in photosynthetic activity which results in the atmosphere retaining higher levels of carbon dioxide. Forests also store an enormous amount of organic carbon which is released into the atmosphere as carbon dioxide when forests are cleared by burning. Clearly, deforestation contributes to global warming and ocean acidification.
- Water recycling is the movement of rain from the forest to land masses further inland. When rain falls on forests the water is intercepted by the forest canopy. Some of this intercepted water is returned to the atmosphere by evaporation and transpiration (release of water vapor into the atmosphere through stomata on tree leaves) while the rest is returned to the ocean as river runoff. In a healthy forest about three fourth of the intercepted water is returned to the atmosphere as moisture laden air masses which move inland, cool and are converted to rain. Land cleared by deforestation returns only about one fourth of the rain water to the atmosphere. This air mass has less moisture and delivers less rain further inland. Deforestation inhibits water recycling and converts inland forest to dry land and potential waste land.
- Severe flooding is a result of deforestation because removal of the forest leaves little vegetative cover to hold heavy rains. The inability of land void of forest to hold heavy rain water will also

trigger mudslides. Severe flooding and mudslides are extremely costly because they devastate homes and communities.

- However, new research from the Indian Institute of Technology (IIT), Kharagpur, shows that a majority of Indian forests are exceptionally resilient to large variations in rainfall and short droughts caused by climate change. The research, which used canopy cover and rainfall changes as criteria to deduce resilience, revealed that forests in wetter regions and scrubs in drier regions would be more resilient to rainfall decline.

Conclusion:

No amount of innovation or technology can replace the life-giving functions that forests provide for people and the planet. It is now established that effectively protecting and restoring forests has the potential to deal with 30% of global greenhouse gas emissions by 2030, thereby significantly mitigating the effects of climate change. Hence, forests and so their conservation is of essential importance.

18. Is diversity and pluralism in India under threat due to globalization? Justify your answer.

Approach

1. **Briefly introduce with the diversity of India (40 words)**
2. **Discuss the threats and positive impacts of globalization on Diversity and pluralism in India (170 words)**
3. **Conclude with positive note and explain how diversity and pluralism is intact in India despite effects of globalization (40 words)**

Hints:

Being a diverse civilization, India is a land of myriad tongue with over 1650 spoken languages and dialects. Despite of different cultures, religions and languages, people of India live together with love and brotherhood. The immense unity in diversity and pluralism makes India an example of cultural brotherhood.

However, globalization has a profound effect on all our cultures and on the ways we live our lives. It has affected what we eat and the way we prepare our food, what we wear and the materials from which our clothing is made, it has affected the music we hear, the books we read, even the language we use to communicate with others. In spite of "unity in Diversity, India is not immune from negative impact of globalizing.

Threats due to globalization on Diversity and pluralism in India

- The biggest challenge for diversity of nation through social networking site is cyber terrorism. Today terrorists select Social Media as a practical alternative to disturb the function of nations, create religious hatred among the masses.
- Popular social networking websites are another means of attracting potential members and followers. These types of virtual communities are growing increasingly popular all over the world, especially among younger demographics. This can build Anti-national Sentiments among Society which in turn can threaten the pluralism in India.
- National subversive groups (Marxist-Leninist groups, anarchist-insurrection list groups) are influenced by other countries and get involved in violence, threatening the diversity of the nation.
- The false propaganda of some international media to malign particular religion has impacted India as well. Its effects are visible mostly in urban areas. For example, there is some instance that in cities the rental rooms are denied by some landlord to particular religious community.
- Globalisation has led to increased economic and cultural hegemony. With globalisation there is arguably less cultural diversity; however, it is also led to more options for some people.

Positive impact of globalisation on Indian diversity and pluralism

- Due to globalization, there has been expansion of economic opportunities, education and liberal thoughts, which has resulted in weakening of the caste system.
- Inter caste marriages are becoming more common and are being accepted gradually.
- With globalization, women's employment opportunities have increase, and now they are also contributing in family expenses which support the creation of new resources and raise the level of income of family.
- The international writers, philosophers and thinkers have further assisted Indian people in having more tolerance, strengthening the "unity in diversity".

Conclusion:

The people of India, despite having different faiths, religions, castes, languages, food habits, dresses, music, and dances, have been living more or less peacefully through the ages. Some sorts of tensions, disputes, and conflicts have always existed because of the inherent contradictions and differences that exist in such diversity. The underlying spirit of respect for plurality, synthesis, and coexistence has transcended over the factors of ethnicity, language, religion, and subregional identity.

19. Customs and traditions suppress reason leading to obscurantism. Do you agree?

Approach

1. *Introduce custom and tradition (40 words)*
2. *Citing examples show how the customs/traditions suppress rationality. How it leads to obscurantism? (170 words)*
3. *Conclusion (40 words)*

Hints:

Customs are traditional and widely accepted course to behave or do something that is clearly defined to a particular society, whereas traditions are about the transmission of these customs or beliefs from generation to generation. The fact is that they have to be passed on in this manner. Unless customs are followed and practiced with lots of self-control and discipline, they can't be passed on from one generation to another as unique cultural traditions specific to their society. This means it is limited, or in fact, no scope for change.

How the customs/traditions suppress rationality

We encounter frequently these traditions in our daily lives, starting from the harmless ones to the most brutal and inhumane customs. Some of the them that prevail in India are as follows:

- Made Snana is a ritual where devotees roll over leftover food by Brahmins to cure skin diseases, marriage problems and infertility. It is conducted during three-day annual celebration outside Kukke Subramanya temple in Dakshina Kannada district between November-December. It is also practiced in parts of Tamil Nadu.
- FGM is the name given to procedures that involve altering or injuring the female genitalia for non-medical or cultural reasons, and is recognized internationally as a violation of human rights and the health and integrity of girls and women. It is one of the most brutal ritual that is practiced in various countries including India among the Dawoodi Bohra community.
- Self-flagellation is a ritual of religious significance done in the name of atonement of one's sins is practised widely even today and the people engaging themselves into the act confess that they do not experience any sort of pain as they are in a religious trance. It is a ritual involving hitting oneself with a whip or whips of chains with attached blades. Practised among the Christian communities in the Phillipines and Mexico on Good Friday and among the Shi'a sect of Islam in countries like India, Pakistan, Iraq and Lebanon during the month of Muharram.

- The Devadasi is a Sanskrit term which means servant of Deva (GOD) or Devi (GODESS). This is a kind of religious practice carried on basically in the southern part of India in which a girl in her pre puberty period was dedicated to worship and service of deity or a temple for the rest of her life by her parents.

How it leads to obscurantism?

- Often these traditions are justified using either pseudo-science or interpretation of religious texts. For example, triple talaq and nikah halala have been defended irrationally by quoting various texts. In Sabarimala case, despite the ban on the entry of women is against the Right to Equality as ensured in the Constitution, has been also defended.
- Since the change in these customs is not welcomed at all, these justifications even suppress the reason of the greatest importance. Sometimes they stand so rigid that a reason looks completely helpless and further leads to obscurantism.
- These obscurantisms protect the customs and traditions from reason, evolution of human and dynamic social order.
- Communal politics, lack of spirit of rationality, lack of education, etc. further aggravate the situation.

Conclusion:

In a democratic polity, whenever there is a conflict between reason and customs, state apparatus esp. judiciary has the task to strengthen the idea of rationality. But, in many cases, state too struggles in doing so. This is the reason that despite the Constitution in Article 51A (h) directs state to develop the scientific temper, humanism and the spirit of inquiry and reform among the citizens, still the situation is far from the desired result.

Customs and traditions need to make people the rational beings taking account of reasons, rather than becoming a reason for obscurantism, ignorance and faithlessness.

20. How have digital initiatives in India contributed to the functioning of the education system in the country? Elaborate your answer.

Approach

1. **Introduce Digitalization (40 words)**
2. **Citing examples, show the contribution of digital initiatives on the functioning of the education system in India. (170 words)**
3. **Digital Tools Used and Impact of Learning Outcomes in the Indian Schools (40 words)**

Hints:

Digitalization is the trending term in 21st century. Right from a child to an experienced old person, they are surrounded by laptops, computers, tablets and smartphones. Educational system is also getting influenced due to the digitalization era.

Contribution of digital initiatives on the functioning of the education system in India

- Education is the pillar of any country. Education transforms the person and leads him/her on the path where he can strive for the economic and social development of the country. The educational system is going through rapid transformation due to which, the children of this generation are be limited to traditional textbooks.
- Their thirst for knowledge cannot be quenched using the age-old methodologies and pedagogies. Their hunger for ever-increasing information can be satisfied by the use of digital tools and Internet in the form of e-learning courses, digital textbooks, interactive animation videos and integrating ICT in classrooms.

- The traditional classrooms are getting transformed to “**SMART**” classrooms. However, this process of digitalization has not touched the rural areas of India effectively. This has created a digital divide between the urban areas and rural areas. “**Digital India**” aims to bridge this gap by connecting the remotest villages through WIFI and broadband.
- The “Digital India” programme is a flagship programme aiming to transform India into a digitally powerful and energized society and skilled economy.
- The Government of India visions to see the most secluded, inaccessible village to be connected by high-speed internet and broadband facilities. This will help in bridging the digital divide between rural and urban areas. This will help in achieving social inclusion and financial inclusion of the rural areas. This also ensures that there is uniformity in the services provided to urban and rural areas.
- **e-Basta:** To be consistent with the Government’s Digital India initiative, this project has been created to make school books approachable, easy-to-use and user-friendly. e-Basta books are available in digital format. E-Bastas can be read and used on tablets and laptops. The main idea is to bring various publishers and schools together on the same stand. The participants of the e-Basta framework are publishers, schools, teachers and students. The e-Basta app can be easily downloaded by the students from all over the world. The contents required are selected by the schools and teachers. The publishers upload and manage content in the portal.
- **E-Pathshala:** It is an app developed by NCERT. This app is house for different kinds of quality textbooks, audios and videos. It addresses a wide audience and also helps in bridging the digital divide between urban and rural areas. It has variety of accessibility options. It can accessed through mobiles (android or IOS) or through web platforms on laptops or desktops.
- **Shaala Siddhi:** It is a platform initiated by National Institute of Educational Planning and Administration. It aims at evaluating the schools to achieve the goal of sustainable improvement. They can also take sensible decisions for achieving their goals by comparing their performance with the criteria specified by the Schools Standards and Evaluation Framework.
- **e-Education:** Digital India aims to connect all the schools in India through Wi-Fi and broadband facilities. This again ensures that all the schools, be it in urban or rural, are able to access the state of art facilities.

Digital India would enable inclusive growth by providing access to better educational facilities. People who had to quit school education can make use of online educational facilities like Swayam. This would in turn increase the literacy rate in India.

Digital Tools Used and Impact of Learning Outcomes in the Indian Schools

- Primary and Secondary schools across the country appear to be more advanced in the adoption of technology. Teachers in primary schools use smart boards and LCD screens to teach concepts in Mathematics, Science, and English Grammar.
- Schools across the country are using technology seamlessly to engage with students and achieve desired results through well-planned learning methods.
- Most schools utilize digital tools such as smart boards, LCD screens, audio-visual videos, digital recordings of older lectures and so on to teach children difficult as well as easy concepts.
- Moreover, the role of a teacher has always been to impart knowledge to students and become facilitators using digital tools.
- However, many school heads concur that these technologies will never replace the physical presence of a teacher, instead complement the entire teaching process.
- In India, most of the school’s teachers are conducting ‘Smart Classes for 6-12th standard and teachers have been trained with the software to use it for main subjects (Maths, Science, History and Geography). The teachers are using it extensively in all the classes; and they plan ahead.

- The schools will soon be a place where the students will learn to study on their own with the help of computers while the teacher being a mere facilitator.
- For a Digital India to succeed in impacting education, it needs a vision and mission to integrate technology as an important part of our large and complex school system. It must have a targeted approach to improve education through digitalization and by providing better teachers and with a comprehensive vision to provide benefit to a large extent of children.
- Some of the techniques that can be incorporated in schools-Introduce benefits of technology in education-The very basic thing is to teach children how to incorporate technology with their education, to gain benefit and to use it as a tool to compete with the ever-growing world. This is mainly required in rural areas where children are very far away from this piece of knowledge. E learning apps- After this some innovative tools can be introduced for providing notes, books, resolving queries of student, practicing question etc. There are 100's of app and software available for students to learn. Smart schools Government should try to incorporate technology from the ground level that is school, more smart school should be open, public schools must be digitalized, classes must be provided to teach student and teachers about the benefits of digital world and everybody must have basic computer proficiency. Smart tools-Schools should be digitalized and must use smart tool to provide education to students like smart board, visual/audio education, school management software for management of school data.

Conclusion:

As the access to internet in India has increased over the years and still rising due to the Bharat Net program, there should be more convergence between traditional and digital education. To achieve the highest potential, the digital divide must be narrowed down further. The digital platform has been the sole medium in the testing time of Covid-19 pandemic which indicates the success of the Digital India Mission. In the coming future one can expect the rise in investment in edutech startups in digital education that can take India to better position of growth and development.

