



Editorial 1: Four for one	08 Oct,2020
Paper-3	GS-2
Subject	International Relations
Topic	Important International institutions, agencies and fora- their structure, mandates.
Why in news?	With the second meeting of the Australia-India-Japan-United States Quadrilateral Strategic Dialogue of Foreign Ministers in Tokyo on Tuesday, the Quad has entered a decisive phase.
Map	
Eagerness of U.S.	<p>The Ministers, who had last met at the UN General Assembly, made a considered push to hold the meeting, despite the COVID19 pandemic. In a departure from the earlier secrecy, they made public a large part of their deliberations, including the decision to make the FM meeting an annual event, to cooperate on combating the pandemic, and on building infrastructure, connectivity and a supply chain initiative in the region. As the host, Japan's Prime Minister Yoshihide Suga dispelled any notion that he might not be as proactive as his predecessor, Shinzō Abe, who originally conceived the idea</p>



	in 2007. Australia's Foreign Minister Marise Payne attended despite the two-week quarantine that she faces on return, and India's External Affairs Minister S. Jaishankar undertook the journey despite the government's preoccupation with the LAC standoff. But it is probably the U.S. that displayed the most eagerness to hold the meeting, just weeks before the Presidential election. Mr. Trump's COVID-19 illness and sudden hospitalisation prompted U.S. Secretary of State Mike Pompeo to cancel other scheduled stops, in South Korea and Mongolia .
Anti-China	In Tokyo, Mr. Trump made it clear that his mission was to direct the Quad towards building a coalition to counter Beijing's aggression in the region, saying that their partnership was not "multilateralism for the sake of it" . He called on the entire Quad to "collaborate to protect" the region from what he called the "CCP's exploitation, corruption, and coercion" , pointing to the LAC standoff, as well as Chinese aggression in the South and East China Seas . What he seemed to propose was not just a coalition of democracies committed to a free and open Indo-Pacific, as the Quad's informal charter has thus far stated. Instead, the U.S. seems keen on turning the Quadrilateral into a full-fledged military alliance of countries facing tensions with China.
Extra-cautious	Mr. Pompeo's words could well be bluster borne of politics ahead of the U.S. elections, but they point to an interest in bringing India into bilateral tensions in the Indo-Pacific, while inviting the Quad to take a role in India-China tensions as well . The Modi government has rebuffed such suggestions, and any shift would be unwise now. India has much to gain strategically and in terms of capacity building from the Quadrilateral dialogue , but little from the impression it is being led by Washington on an important initiative for the region in which India is an equal and important stakeholder.

Reference: <https://www.thehindu.com/opinion/editorial/four-for-one-the-hindu-editorial-on-quad-india-and-the-us/article32797257.ece>

Editorial 2 : Using facts to hide underlying truths 08 Oct, 2020

Paper-3	GS-2
Subject	Social Justice
Topic	Welfare schemes for vulnerable sections of the population by the Centre and States and the performance of these schemes; mechanisms, laws, institutions and Bodies constituted for the protection and betterment of these vulnerable sections.
Why in news?	The inhuman assault of the teenage Dalit girl in Hathras that eventually killed her was followed by a hesitation in filing the first information report, the callous and deferred medical examination, the neglect of the dying declaration, and, most alarmingly, the haste in burning the body by the police without appropriate rites or the presence of family members . This wilful destruction of evidence was followed by political tyranny: family members were virtually put under house arrest, the entire village was barricaded by massive police force, Opposition leaders and mediapersons who tried to reach the victim's family were stopped and roughed up — an appalling instance of dictatorial behaviour that made a mockery of our constitutional democracy.
Shaping the discourse	<ul style="list-style-type: none"> • Using false arguments by spokespersons of the ruling party to deceive the listener is a common form of sophistry. But what was heard here was the use of true statements to hide other more urgent and relevant truths. • This is no ordinary fake news or misinformation but the clever use of seemingly appropriate words and phrases with the clear intention of deceiving the populace. • Few better instances are available of how facts and truth are used to generate a false discourse. There are three examples. <ol style="list-style-type: none"> 1. Take first the issue of misdescription. It was being said on a television channel that 'I was pained at the death of the young woman'. On the face of it, it sounds sensitive and apt; but it is incontrovertibly true that she was mercilessly pulverised and



	<p>eventually killed, the term 'died' is entirely inappropriate.</p> <ol style="list-style-type: none"> 'Death' fails to distinguish the demise of a person by natural causes, accident, suicide or murder. To speak of the death of a person when she was murdered is grossly misleading. It obfuscates truth. Likewise, pain alone is not an appropriate emotion in the face of a brutal murder. To not have feelings of anger, horror, or outrage indicates an emotional and moral disability. Together, they hide the truth of the gruesome incident.
Irrelevant explanations	<p>Consider the following example. An investigating police officer enters a charred house, and finds a can of kerosene and a used matchstick. As he exits, a reporter asks how the house caught fire. The officer answers "because of the presence of oxygen at the location". Now, this account is not untrue, for nothing catches fire without the presence of oxygen. However, the response is entirely irrelevant and would send the news reporter into a tizzy. The answer is wrong because a good explanation needs to be not merely factually correct but relevant to the question at hand. Surely, at the back of the reporter's mind is whether the house was burnt accidentally or intentionally and if the latter, precisely who caused it and why. Finding the motive and attributing responsibility for the criminal act is vital. Likewise, it is probably true that males are prone to aggression. Yet, like oxygen, this is part of the standing conditions of specific acts of rape and murder. It is not explanatorily relevant in most cases of actual violence such as in Hathras. If our interest is in finding precipitating causes for why Victim was assaulted, we need to identify local social, economic, cultural, perhaps political factors. To provide irrelevant and general statements instead is a straightforward ploy to hide the truth, to cover up a possible crime.</p>
Identity of the victim	<p>This crime would likely not have occurred if it was not for Victim's Dalit identity. Indeed, she was reportedly gang raped and murderously beaten not only because she was a Dalit but precisely because in the past, her family had resisted 'upper caste' domination. Even Victim did not remain mute as she lay battered, but named her perpetrators in her dying declaration.</p>
The inadequacies of homilies	<p>Usually the same is true of our religious identity. This is why the targeting of Dalits or Muslims all over India or of Kashmiri Pandits only because of who they are brings in a dimension of violence that cannot be condemned by general homilies such as 'all killing is horrible' or that 'all rapes are terrible'. To mistreat, discriminate and target individuals because of their colour, gender, religion or nationality is to commit a crime qualitatively different from other horrific acts. For it attacks and terrorises not just one person but her entire community. To omit any mention of these specific group identities where relevant is then to entirely misdescribe the crime and obscure its real cause.</p>
Reference: https://www.thehindu.com/opinion/lead/using-facts-to-hide-underlying-truths/article32797271.ece	
Editorial 3: The hole in the middle 08 Oct,2020	
Paper-4	GS-3
Subject	Science and Technology
Topic	Awareness in the fields of Space.
Why in news?	This year's Nobel prize in physics awards studies that established the existence of black holes. It celebrates theoretical work as much as it does dedicated observation.
Prize contribution	Andrea Ghez is only its fourth woman recipient. Roger Penrose, now at Oxford, who gets half the prize, ingeniously used mathematics in the 1960s to theorise under what conditions black holes must form. The other half of the prize is jointly awarded to Reinhard Genzel, at the Max Planck Institute for Extraterrestrial Physics, Garching, Germany, and Prof. Ghez, of the UCLA, U.S., for showing that the dense region in the centre of our galaxy — the Milky Way — is indeed a black hole.
Singularity theorems	This was a time when the reality of black holes as a solution to Albert Einstein's field equations of the General Theory of Relativity was not accepted by many prominent physicists. Within a couple of months after Einstein proposed his General Theory of Relativity in 1915, Karl Schwarzschild published a solution to the field equations that exhibited singularities, or points where physical quantities grew infinitely large or vanished.



	Today, this is understood as the event horizon — the point of no return beyond which even light cannot escape the black hole's gravitational attraction . While more solutions were found to Einstein's equations that suggested black holes, they all required special symmetries and their realisation under general astrophysical conditions was doubtful. Penrose , through the singularity theorems , identified the formation of trapped surfaces as the condition for the formation of black holes in a generic manner. In this climate came observational hints of supermassive black holes, through the discovery of what were initially called quasars that were supermassive and found at the centre of galaxies .
Sagittarius A*	Towards the end of the 1960s it was clear that the region named Sagittarius A* occupies the centre of the Milky Way, which is about 26,000 light years away . Around this, all stars in the galaxy orbit . In the 1990s , when telescopes and equipment were developed that could tackle this distance, Prof. Genzel and Prof. Ghez set up independent groups to explore this region. They built unique instruments and pursued research from Very Large Telescope, in Chile, and the Keck Observatory, Hawaii , respectively. For three decades, the groups tracked nearly 30 stars, in particular one named S2 (or S02) . This star's orbit has been nearly completely tracked. These stars followed elliptical, Keplerian, orbits, which can only imply a central concentrated massive object — a supermassive black hole . Thus, the prize strings together theoretical research from the 1960s driven by conviction, and a threedecade long observational study that started in the 1990s
Reference:	https://www.thehindu.com/opinion/editorial/the-hole-in-the-middle-the-hindu-editorial-on-2020-physics-nobel/article32797267.ece

Editorial 4: Playing catch up in flood forecasting technology**08 Oct,2020**

Paper-4	GS-3
Subject	Disaster management.
Topic	Disaster and disaster management.
Deterministic flood forecast	In this method, a local agency makes a decision if a flood forecast merely uses the words "Rising" or "Falling" above a water level at a river point? Especially when the time available to act is just 24 hours , there is no idea of the area of inundation, its depth, and when the accuracy of the forecast decreases at 24 hours and beyond? There are many times this happens in India during flood events, when the end users (district administration, municipalities and disaster management authorities) receive such forecasts and have to act quickly. These compelling scenarios are often experienced across most flood forecast river points, examples readers will be familiar with — in Assam, Bihar, Karnataka, Kerala or Tamil Nadu .
"Ensemble forecast"	This method provides a lead time of 710 days ahead , with probabilities assigned to different scenarios of water levels and regions of inundation. An example of the probabilities ahead could be something like this: chances of the water level exceeding the danger level is 80%, with likely inundation of a village nearby at 20% . The "Ensemble flood forecast" certainly helps local administrations with better decisionmaking and in being better prepared than in a deterministic flood forecast.
Examples	The United States, the European Union and Japan have already shifted towards "Ensemble flood forecasting" along with "Inundation modelling" . India has only recently shifted towards "Deterministic forecast" (i.e. "Rising" or "Falling" type forecast per model run) .
The shortcomings with Indian flood forecasting are glaring:	
A case of multiple agencies	<ol style="list-style-type: none"> 1. The India Meteorological Department (IMD) issues meteorological or weather forecasts while the Central Water Commission (CWC) issues flood forecasts at various river points. The enduser agencies are disaster management authorities and local administrations. Therefore, the advancement of flood forecasting depends on how quickly rainfall is estimated and forecast by the IMD and how quickly the CWC integrates the rainfall forecast (also known as Quantitative Precipitation Forecast or QPF) with flood forecast. 2. It also is linked to how fast the CWC disseminates this data to end user agencies. Thus, the length of time from issuance of the forecast and occurrence of a flood event termed as "lead time" is the most crucial aspect of any flood forecast to enable riskbased decisionmaking and undertake costeffective rescue missions by end user agencies. 3. Technology plays a part in increasing lead time. Reports suggest that the IMD has about 35 advanced Doppler weather radars to help it with weather forecasting. 4. Compared to point scale rainfall data from rain gauges, Doppler weather radars can measure the likely rainfall directly (known as Quantitative Precipitation Estimation or QPE) from the cloud



	<p>reflectivity over a large area; thus the lead time can be extended by up to three days.</p> <ol style="list-style-type: none"> But the advantage of advanced technology becomes infructuous because most flood forecasts at several river points across India are based on outdated statistical methods (of the type gauge-to-gauge correlation and multiple coaxial correlations) that enable a lead time of less than 24 hours. This is contrary to the perception that India's flood forecast is driven by Google's most advanced Artificial Intelligence (AI) techniques! These statistical methods fail to capture the hydrological response of river basins between a base station and a forecast station. They cannot be coupled with QPF too. Google AI has adopted the hydrological data and forecast models derived for diverse river basins across the world for training AI to issue flood alerts in India. This bypasses the data deficiencies and shortcomings of forecasts based on statistical methods.
Not uniform across India	<ol style="list-style-type: none"> A study by the National Institute of Technology, Warangal, Telangana shows that it is only recently that India has moved to using hydrological (or simply rainfallrunoff models) capable of being coupled with QPF. So, a lead time of three days is sporadic in India, and at select river points. Just as the CWC's technological gap limits the IMD's technological advancement, the technological limitations of the IMD can also render any advanced infrastructure deployed by CWC infructuous. Here is another example. The United States which is estimated to have a land area thrice that of India, has about 160 next generation S-band Doppler weather radars (NEXRAD) with a range of 250-300 km. India will need at least an 80-100 S-band dense radar network to cover its entire territory for accurate QPF. Else, the limitations of altitude, range, band, density of radars and its extensive maintenance enlarge the forecast error in QPF which would ultimately reflect in the CWC's flood forecast. Conspicuously, the error margin is always away from the public gaze. Therefore, outdated technologies and a lack of technological parity between multiple agencies and their poor water governance decrease crucial lead time. Forecasting errors increase and the burden of interpretation shifts to hapless end user agencies. The outcome is an increase in flood risk and disaster.
Ensemble technology	<p>Global weather phenomenon is chaotic. For instance theoretically, "the flap of a butterfly's wings in Chennai can create a Tornado in Tokyo" according to MIT's Edward Lorenz. In simple terms and scientifically, any small change in the initial conditions of a weather model results in an output that is completely unexpected. Therefore, beyond a lead time of three days, a deterministic forecast becomes less accurate. The developed world has shifted from deterministic forecasting towards ensemble weather models that measure uncertainty by causing perturbations in initial conditions, reflecting the different states of the chaotic atmosphere. Probabilities are then computed for different flood events, with a lead time beyond 10 days.</p>
Way forward	<p>the IMD has begun testing and using ensemble models for weather forecast through its 6.8 peta flops supercomputers ("Pratyush" and "Mihir"), the forecasting agency has still to catch up with advanced technology and achieve technological parity with the IMD in order to couple ensemble forecasts to its hydrological models. It has to modernise not only the telemetry infrastructure but also raise technological compatibility with river basin specific hydrological, hydrodynamic and inundation modelling. To meet that objective, it needs a technically capable workforce that is well versed with ensemble models and capable of coupling the same with flood forecast models. It is only then that India can look forward to probabilisticbased flood forecasts with a lead time of more than seven to 10 days and which will place it on par with the developed world. With integration between multiple flood forecasting agencies, end user agencies can receive probabilistic forecasts that will give them ample time to decide, react, prepare and undertake risk-based analysis and costeffective rescue missions, reducing flood hazard across the length and breadth of India.</p>
Reference:	https://www.thehindu.com/opinion/lead/playing-catch-up-in-flood-forecasting-technology/article32797281.ece
Editorial 1: Scissoring the DNA	
09 Oct,2020	
Paper-4	GS-3
Subject	Science and Technology
Topic	Science and Technology- developments and their applications and effects in everyday life.
Why in news?	This year's Nobel Prize for chemistry has created history by honouring an all-woman team . The Prize awarded to Emmanuelle Charpentier and Jennifer A. Doudna , just eight years after they developed the CRISPR-Cas9 gene-editing technology tool , has finally ended the speculation of who would win it.



How it started?	It all started when Dr. Charpentier discovered an RNA molecule that is part of bacteria's ancient immune system — CRISPRCas — wherein clustered repeated sequences produced by bacteria can remember and destroy viruses by cleaving their DNA. Teaming with Dr. Doudna , she recreated the bacteria's genetic scissors in a test tube and simplified the tool to make it easier to programme the system to precisely cut specific sites of interest in any DNA, including humans. While the tool is most often used to make a cut in the DNA, newer approaches are being attempted to add or make minor changes to the DNA. All these approaches may at some time in the future make it easy to " rewrite the code of life ".
A vast window of opportunity	In the last six years, the tool has enabled scientists to edit human DNA in a dish and early stage clinical trials are being attempted to use the tool to treat a few diseases, including inherited disorders/ diseases and some types of cancer. Though in 2016 China began the first human clinical trial to treat an aggressive form of lung cancer by introducing cells that contain genes edited using CRISPR-Cas9, the use of the tool has so far been limited to curing genetic diseases in animal models. Last year, a Chinese researcher used the tool to modify a particular gene in the embryo to make babies immune to HIV infection , which led to international furore.
Ethics behind gene-editing technology	Though no guidelines have been drawn up so far, there is a general consensus in the scientific and ethics communities that the gene-editing technique should not be used clinically on embryos . Unlike in the case of humans, the tool is being extensively used in agriculture . It is being tried out in agriculture primarily to increase plant yield, quality, disease resistance, herbicide resistance and domestication of wild species. The huge potential to edit genes using this tool has been used to create a large number of crop varieties with improved agronomic performance; it has also brought in sweeping changes to breeding technologies.

Reference: <https://www.thehindu.com/opinion/editorial/scissoring-the-dna-the-hindu-editorial-on-2020-nobel-prize-for-chemistry/article32806854.ece>

Editorial 2 : Hathras, a new phase in the caste atrocity narrative 09 Oct,2020

Paper-3	GS-2
Subject	Social Justice
Topic	Mechanisms, laws, institutions and Bodies constituted for the protection and betterment of vulnerable sections.
Introduction	The gang rape that took place recently in Bul Garhi , a tiny village near Hathras in Uttar Pradesh , marks a new phase in the eventful history of rape as caste-atrocity in the 21st century. The idea of the caste atrocity is itself a product of the last quarter of the 20th century.
Criminalising the 'legitimate'	A provisional answer to this dilemma emerges through the notion of the caste atrocity, and a new law — the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989 . The Act highlights the truth that an extraordinary law is needed to criminalise practices that were considered ordinary and legitimate not so long ago. The term " atrocity ", like its predecessor " untouchability ", is not defined in the law, which only refers to a list (under Section 3 of the Act) of practices — ranging from extremes such as being forced to eat excreta, to varied forms of routinised humiliation and discrimination, including economic boycott, social exclusion, sexual violence and political disenfranchisement.
Patterns of denial	<ol style="list-style-type: none"> 1. Contemporary thinking on caste rape was jumpstarted by the infamous 1995 judgment of the Rajasthan High Court in the Bhanwari Devi gang rape case, which held that upper caste men could never rape a lower caste woman because they would not touch her. By explicitly invoking caste to deny rape, the judgment provided an instructive and stark contrast to the persistent denial of caste in rape cases involving Dalit women, especially after the Prevention of Atrocities Act came into force. 2. The classic instance of caste denial was the Khairlanji case of 2006. Anand Teltumbde's (The Persistence of Caste: The Khairlanji Murders & India's Hidden Apartheid) careful



	reconstruction establishes the undeniable centrality of caste in the ongoing enmity between Surekha Bhotmange, a Mahar woman, and her Kunbi opponents . Surekha's assertiveness and the upward mobility of her family had narrowed the social distance between the two castes to a level that was unbearable for the dominant Kunbis. Following the horrific sexual assault and murders of Surekha, her daughter and two sons, the Nagpur High Court judgment insisted that it was a revenge killing that had nothing to do with caste .
The 'Nirbhaya' impact	<ol style="list-style-type: none"> 1. The next phase in the evolution of caste denial arrives with Delhi's 'Nirbhaya' fatal gang rape in December 2012. Between 2012 and 2013, neighbouring Haryana witnessed a relentless succession of rapes, gang rapes, sexual assaults and murders of Dalit women and girls, significant enough to be reflected in National Crime Records Bureau data. 2. Public and media responses to the Haryana rapes were muted in the face of all the attention to the Delhi gang rape, but they were not silenced, as they had been initially in Khairlanji. 3. Haryana did see local mobilisations by Dalit activist groups and support from some Delhi-based Dalit and women's organisations. Several cases were successfully filed despite opposition from the all powerful Jat community, to which most of the accused belonged. 4. A common tactic of the accused was to try and turn every rape case into one of consensual sex, and every murder into suicide. This was accompanied by the denial of caste regardless of the identity of victim or perpetrator. When out of court settlements or compromises failed, caste details were invariably removed from the records, and the Prevention of Atrocities Act was not allowed to be applied. 5. The recent Bul Garhi case seems to be breaking with earlier patterns. In an eerie coincidence, its as yet unnamed victim died on September 29, exactly 14 years after Surekha Bhotmange and her children were killed on September 29, 2006. In continuity with the past, we have a Dalit (Balmiki) young woman allegedly raped, battered, maimed, and left to die by dominant caste (Thakur) men, and the familiar initial attempts at coverup and denial. But everything else is a contrast.
The State's response	Instead of acting as passive facilitators for the accused as they have usually done, the police here take on the role of an active accomplice. In what later proves to be a decisive moment, they forcibly cremate the body and do not allow the family to conduct the last rites. The truly stunning performance is that of the State Chief Minister who stands caste denial on its head by claiming that protests against the incident are acts of sedition , part of a foreignfunded conspiracy to foment caste riots, motivated by jealousy of his State's development record.
Some hope	This is a new trajectory . The casterape itself is brushed aside without comment, and it is the responses to it that are accused of instigating a caste war. There are, however, some unprecedented positives. An anonymous dead woman has invited mass identification with a Dalit cause for the first time since Rohith Vemula . And finally, the Bul Garhi casterapemurder has triggered the first mass demonstrations since the antiCAA movement. This is going to be a long and interesting century.
Reference:	https://www.thehindu.com/opinion/lead/hathras-a-new-phase-in-the-caste-atrocity-narrative/article32806863.ece