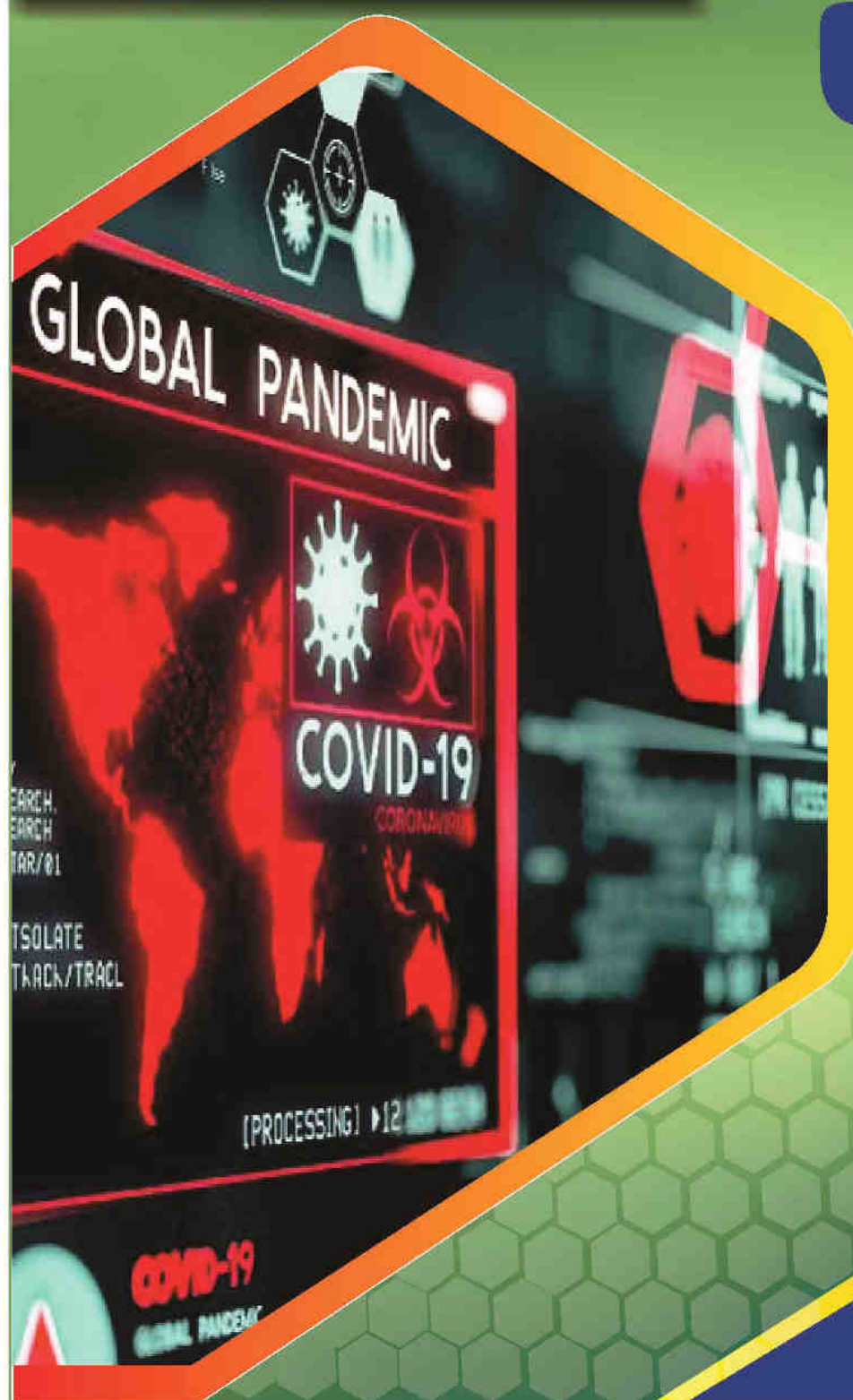


PERFECT 7

A New Initiative of Dhyeya IAS

**Weekly
Current Affairs**



1

Response to Coronavirus

Technological
Dimension

2

De-crowding the
Prisons at the Time of
COVID-19

3

MPLADS Funds to
Fight COVID-19 :
An Analysis

4

Spike in Domestic
Violence in the Time
of Lockdown

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Coronavirus Brings
Healthcare Sector
into the Spotlight

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Coronavirus
Re-modelling Global
Cooperations

7

Biomining to Address
the Issue of Legacy
Waste



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Ministry of Health & Family Welfare
Government of India



Help us to
help you

NOVEL CORONAVIRUS (COVID-19)



Protect yourself and others!

Follow these **Do's** and **Don'ts**

Do's ✓



Practice frequent hand washing. Wash hands with soap and water or use alcohol based hand rub. Wash hands even if they are visibly clean



Cover your nose and mouth with handkerchief/tissue while sneezing and coughing



Throw used tissues into closed bins immediately after use



See a doctor if you feel unwell (fever, difficult breathing and cough). While visiting doctor wear a mask/cloth to cover your mouth and nose



If you have these signs/symptoms please call State helpline number or Ministry of Health & Family Welfare's 24X7 helpline at 011-23978046



Avoid participating in large gatherings

✗



Have a close contact with anyone, if you're experiencing cough and fever

✗



Touch your eyes, nose and mouth

✗



Spit in public

Don'ts ✗

Together we can fight Coronavirus

For further information :

Call at Ministry of Health, Govt. of India's 24X7 control room number

+91-11-2397 8046

Email at ncov2019@gmail.com



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**Vinay Kumar Singh****CEO and Founder
DHYEYA IAS**

The guiding philosophy of the institute, throughout, has been creation of knowledge base. Dhyeya IAS inculcates human values and professional ethics in the students, which help them make decisions and create path that are good not only for them, but also for the society, for the nation, and for the world as whole. To fulfill its mission in new and powerful ways, each student is motivated to strive towards achieving excellence in every endeavor. It is done by making continuous improvements in curricula and pedagogical tools. The rigorous syllabi not only instills in them, a passion for knowledge but also attempts to teach them how to apply that knowledge in real-life situations. The programmes lay emphasis on well-rounded personality development of the students and also in inculcating the values of honesty and integrity in them.

**Q H Khan****Managing Director
DHYEYA IAS**

Dhyeya IAS is an institution that aims at the complete development of the student. Our faculty are hand-picked and highly qualified to ensure that the students are given every possible support in all their academic endeavors. It is a multi-disciplinary institution which ensures that the students have ready access to a wide range of academic material.

Our brand of education has broad horizons as we believe in exposure. Our students are encouraged to widen their knowledge base and study beyond the confinements of the syllabus. We aim to lend a gentle guiding hand to make our students recognize their inner potential and grow on their own accord into stalwarts of tomorrow's society.

Perfect 7

AN INTRODUCTION



Qurban Ali

Chief Editor
DHYEYA IAS

(Ex Editor- Rajya Sabha TV)

With immense pleasure I would like to inform you that the new version of '**Perfect 7**', from the Dhyeya IAS, is coming with more information in a very attractive manner. Heartily congratulations to the editorial team. The '**Perfect 7**' invites a wider readership in the Institute. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of the teacher is to nurture the skills and talents of the students as a facilitator. This magazine is going to showcase the strength of our Institute. Let this be a forum to exhibit the potential of faculties, eminent writers, authors and students with their literary skills and innovative ideas.

Please do visit our website www.dhyeyaias.com and our youtube channel for regular and updated information on current affairs.



Ashutosh Singh

Managing Editor
DHYEYA IAS

We have not only given the name '**Perfect 7**' to our magazine, but also left no stone unturned to keep it 'near to perfect'. We all know that beginning of a task is most challenging as well as most important thing. So we met the same fate.

Publishing '**Perfect 7**' provided us various challenges because from the beginning itself we kept our bar too high to ensure the quality. Right from the very first issue we had a daunting task to save aspirants from the 'overdose of information'. Focusing on civil services exams '**Perfect 7**' embodies in itself rightful friend and guide in your preparation. This weapon is built to be precise yet comprehensive. It is not about bombardment of mindless facts rather an analysis of various facets of the issues, selected in a systematic manner. We adopted the 'Multi Filter' and 'Six Sigma' approach, in which a subject or an issue is selected after diligent discussion on various levels so that the questions in the examination could be covered with high probability.

Being a weekly magazine there is a constant challenge to provide qualitative study material in a time bound approach. It is our humble achievement that we feel proud to make delivered our promise of quality consistently without missing any issue since its inception.

Your suggestions and popular demands have inspired us to come up with a coloured edition of '**Perfect 7**' on this pious festival of colours. May this version of '**Perfect 7**' instill a new energy and a new spirit in you. We wish that the bond of affection between you and Dhyeya IAS is reaches a new height.

PREFACE



On the joyous occasion of Holi, Dhyeya family has decided to bring a new colourful and vibrant version of **'Perfect 7'** – a panacea for current affairs. Just like vividness of colours, newer version of **'Perfect 7'** will add positive and dynamic energy in your preparation.

'Perfect7' is an outstanding compilation of current affairs topics as per the new pattern of Civil Service examination (CSE). It presents weekly analysis of information and issues (national and international) in the form of articles, news analysis, brain boosters, PIB highlights and graphical information, which helps to understand and retain the information comprehensively. Hence, **'Perfect 7'** will build in-depth understanding of various issues in different facets.

'Perfect7' is our genuine effort to provide correct, concise and concrete information, which helps students to crack the civil service examination. This magazine is the result of the efforts of the eminent scholars and the experts from different fields. **'Perfect 7'** is surely a force multiplier in your effort and plugs the loopholes in the preparation. We believe in environment of continuous improvement and learning. Your constructive suggestions and comments are always welcome, which could guide us in further revision of this magazine.

Omveer Singh Chaudhary

Editor
Dhyeya IAS

As a proud jewel of Dhyeya IAS, **'Perfect 7'** now comes in a new coloured avatar. **'Perfect 7'** is a quintessential part of your preparation strategy for Civil Services Examination. A regular and manageable dose of current affairs will now reach you in new format, making it more reader friendly. Our humble attempt to serve you is surely rewarded by your appreciations. It encourages us to innovate and provide the best as per our ability.

A dedicated team of experts at Dhyeya IAS toils night and day to make your dream of Civil Services come true. I heartily thank and express my gratitude to the esteemed readers and all the people involved in making this magazine a shining star in the galaxy of Dhyeya IAS.

Rajat Jhingan

Editor
Dhyeya IAS

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Current Affairs
Monthly News Paper



DHYEYA TV

Current Affairs Programmes hosted

by **Mr. Qurban Ali**

(Ex. Editor Rajya Sabha, TV) & by Team Dhyeya IAS
(Broadcasted on YouTube & Dhyeya-TV)

SEVEN IMPORTANT ISSUES

1. RESPONSE TO CORONAVIRUS : TECHNOLOGICAL DIMENSION

Why in News?

- ◆ The World Health Organisation (WHO) has received overwhelming pro-bono support from technology companies to fight the COVID-19 pandemic. On 2 April, 30 of the world's leading digital technology experts gathered in a virtual roundtable to help advance WHO's collaborative response to COVID-19.
- ◆ World over, already many nations has deployed various technological solutions to address the issue of surveillance and management of COVID-19 crisis. Disinfecting drones, talking robots, Artificial Intelligence (AI) that can scan thousands of medical images in a flash.

Most Commonly used Technologies

Location Tracking

- ◆ Tracking people's whereabouts through the location information provided by their phones has been crucial to identifying where an infected person went before being quarantined and how many people were in close proximity to the patient.
- ◆ Israel has allowed its internal security agency the use of its citizens' location data for 30 days.

- ◆ South Korea, China and Taiwan have also used location-tracking widely to limit the transmission of the virus.
- ◆ However, in Europe, which has stricter laws on data protection, Germany and Italy are using anonymised location data to identify public spaces where people are gathering in groups by defying lockdowns.

CCTVs

- ◆ When a family of three in Kerala's Pathanamthitta district tested positive for COVID-19 after returning from Italy, local authorities realised the family had visited several places and met many people for a week before they were quarantined. Reviewing CCTV footage from the areas they had been to was one of the methods the local administration used to track down 900 people the family could have potentially infected.
- ◆ South Korea and Singapore, too, have used CCTVs extensively in contact-tracing.

Smart Imaging

- ◆ In an effort to enable contactless and rapid temperature detection, China is using AI-powered thermal cameras to identify those in a crowd who have a fever.

- ◆ The country is also deploying facial-recognition systems to identify those not wearing masks.

Mobile Apps

- ◆ A startup in the UK recently launched an app for people to self-report their symptoms. C-19 Covid Symptom Tracker, which was downloaded 7.5 lakh times in three days, helps identify high-risk areas, among other things. South Korea has an app called Corona 100m that has mapped the locations of COVID-19 patients and alerts users if they come within 100 metres of an infected person.
- ◆ In China, apps developed by Alibaba and Tencent give people a colour code based on their health condition and travel history. This code, decided by a big data-driven algorithm, will determine whether a person gains entry into a mall or a subway station, or can travel between cities.

Robotics

- ◆ From preparing meals at hospitals, doubling up as waiters in restaurants, spraying disinfectants to vending rice and dispensing hand sanitizers, robots were on the frontline to prevent the spread of Coronavirus.
- ◆ In many hospitals, robots were also performing diagnosis and

conducting thermal imaging. Shenzhen-based company Multicopter is using robots to transport medical samples.

- ◆ Most of the devices in the hospital are Internet of Things (IoT) enabled and services are carried out by robots. The initial screening of the patients is done by 5G-enabled thermometers that send instant updates. Also, there are rings and bracelets that are connected to the CloudMinds AI platform so that it can monitor all changes in the body.
- ◆ As per a Reuters report, a small robot called 'Little Peanut' was delivering food to passengers on a flight from Singapore to Hangzhou, China who were being held under quarantine in a hotel.

Big Data and Facial Recognition

- ◆ Access to public information has led to the creation of dashboards that are continuously monitoring the virus. Several organizations are developing dashboards using Big Data.
- ◆ Face recognition and infrared temperature detection techniques have been installed in all leading cities. Chinese AI companies like SenseTime and Hanwang Technology have claimed to come up with a special facial recognition technology that can accurately recognize people even if they are masked.

India and Technology

- ◆ **Aarogya Setu App:** Ministry of Electronics and IT launched a mobile app called 'Aarogya Setu' which will help people in identifying the risk of getting affected by the Coronavirus. The app built through public private partnership will assess themselves the risk for their catching the Corona virus infection. It will calculate

this based on their interaction with others, using cutting edge Bluetooth technology, algorithms and artificial intelligence. Once installed in a smart phone, the app detects other nearby devices with AarogyaSetu installed. The app can then calculate the risk of infection based on sophisticated parameters if any of these contacts is tested positive.

- ◆ The '**GoCoronaGo**' app has been developed by a team at IISc which can help identify people who may have crossed paths with COVID-19 suspects.
- ◆ A B.Tech student at the Indian Institute of Technology (IIT) Ropar has developed a mobile-based app called '**Sampark-o-Meter**' which can indicate areas on maps with maximum coronavirus infection possibility.
- ◆ A team of students and alumni at IIT Bombay, have made a mobile app named '**CORONTINE**' that will help in tracking the potential or suspected asymptomatic carriers (AC) of coronavirus if they leave their quarantine zone.

GIS Applications

Epidemic Thematic Service Map:

It enables real-time visual display of epidemic data. After the epidemic information concerning provincial and municipal health commission and emergency headquarters is released, it can be immediately mapped and the spatial, temporal and quantitative features of the epidemic data can be visually displayed on maps. This can express the geospatial positioning information of counties, townships, villages and groups, and further provide accurate base map foundation for the epidemic data-on-map within the province.

Users can easily assess the epidemic risk level distribution of

surroundings, city statistics, location of confirmed cases and distribution of fixed-point hospital and fever clinics. This map can provide scientific and effective technical support for the establishment of an effective early warning mechanism and prevention and control policies.

Dynamic Map System of Epidemic Prevention and Control:

Such a system integrates multi-source data of administrative division maps and epidemic prevention and control. Based on the capabilities of spatial Big Data analysis and insight and visualization of spatial Big Data, the thematic applications of situational awareness of epidemic prevention and control and related research and judgment of epidemic situation can be provided to the concerned authorities and the general public. The system supports the integration of protective resource data (reported epidemic data, key personnel data, quarantine stations and centralized medical treatment points) and spatial data (administrative divisions and grid-based map data) to achieve accurate spatial positioning and management.

Epidemic Situation Awareness map:

It visually shows the geographical distribution of new confirmed cases, cumulative diagnoses and recovered cases through administrative divisions and community grid maps. It also supports the use of aggregation, heat and scattered points to display the epidemic trend in a manner of spatio-temporal evolution, and displays the development trend of the epidemic in multiple dimensions.

Epidemic Correlation Research and Judgment Map:

It is used to find out the train, bus, subway and plane information of diagnosis connected to the network based on Big Data analysis and geographic visualization through the real-time comparison of the coordinated traffic ticket information and epidemic observers.

Privacy Implications

- ◆ While such advanced technologies have come to the rescue of millions at such a critical time, they have come at a heavy cost — as far as privacy is concerned.
- ◆ China is already known for its iron fist control on Internet and an intrusive surveillance system, which has been considerably strengthened with the installation of facial recognition powered CCTV cameras in all major cities to fight the Coronavirus.
- ◆ There is no doubt that extraordinary times call for extraordinary measures, and getting rid of the virus, saving lives and resuming normalcy is of paramount interest.

- ◆ This has necessitated that the contentious privacy versus security debate is muted, and rightly so.

Way Forward

- ◆ In the 21st century technology cannot be left behind in a fight against an invisible and all pervasive deadly virus.
- ◆ The surveillance of mass spread of the infection is not possible by human oversight when the impact is at such a large scale.
- ◆ Science and technology are at very much disposal for the people of information age, technology expands the scope of human efforts and imparts efficiency with speed.

- ◆ Though the question of privacy and individual rights and data-collection are surely of prime importance, but at the time of crisis when desperate measures are needed to save human lives, there needs to be the balance of rights of people and their welfare.

General Studies Paper- III

Topic: Science and Technology-developments and their applications and effects in everyday life.

Topic: Achievements of Indians in Science & Technology; indigenization of technology and developing new technology.



Q. In the era of Information Technology, the global health crisis COVID-19 has been well responded by various technological interventions. Highlight various technologies being implemented to meet the challenges posed by COVID-19 crisis.

2. DE-CROWDING THE PRISONS AT THE TIME OF COVID-19

Why in News?

- ◆ On March 23, the Supreme Court in a suo moto (on its own) petition directed for a high-powered committee to be set up to determine which class of prisoners can be released on parole or interim bail to reduce crowding in jails in view of the coronavirus outbreak.
- ◆ It said the parameters would be nature of offence, sentence awarded to the convict and severity of the offence.

Supreme Court: Decongesting the Prisons

- ◆ The Bench headed by Chief Justice of India SA Bobde directed the states to form a high-powered committee comprising the Principal Secretary of the Home Department, the Chairman of the State Legal Services Authority, and the Director General of Prisons to consider various steps for decongesting the prisons.
- ◆ Notably, this committee is in charge of determining which class of

prisoners can be released on parole or an interim bail for such period as may be thought appropriate.

- ◆ The Court has also issued general directions to the States and Union Territories (UTs) to ensure maximum possible distancing among the prisoners including undertrials to minimise the risk of viral transmission.
- ◆ Moreover, the Bench has directed that to prisoners should be transferred to other prisons during this time, except for decongestions of prisons and to ensure social

distancing or for medical treatment. Further, that, "there should not be any delay in shifting sick person to a Nodal Medical Institution in case of any possibility of infection is seen."

- ◆ It was also emphasised that the prisoner authorities must be ready with response plans developed in consultation with medical experts. A monitoring team at the State level is also to be set up to ensure that any directives issued in this regard are scrupulously followed.
- ◆ In the previous hearing on the issue, the Court had observed that the overcrowding in prisons across the country posed a risk during the ongoing health crisis. It said that while the Government of India has issued an advisory for maintaining social distance, the prisons in our country remain to be overcrowded.

Release of Prisoners and Undertrials

- ◆ Days after the Supreme Court told states to decongest jails to prevent coronavirus spread, prisons in Delhi, Assam, Madhya Pradesh, Maharashtra and others have begun to release inmates on parole. These include undertrials sentenced for up to seven years or less. A high-powered committee in Delhi has relaxed the bail criteria. Over 400 inmates of Tihar Jail have been released whereas Uttar Pradesh gave bail to 11,000 prisoners.
- ◆ In pursuance to the Supreme Court's order, Tripura and Mizoram governments have initiated the process to release around 900 prisoners on interim bail or Personal Recognizance Bond (PR Bond) to prevent the novel coronavirus pandemic inside the jails.

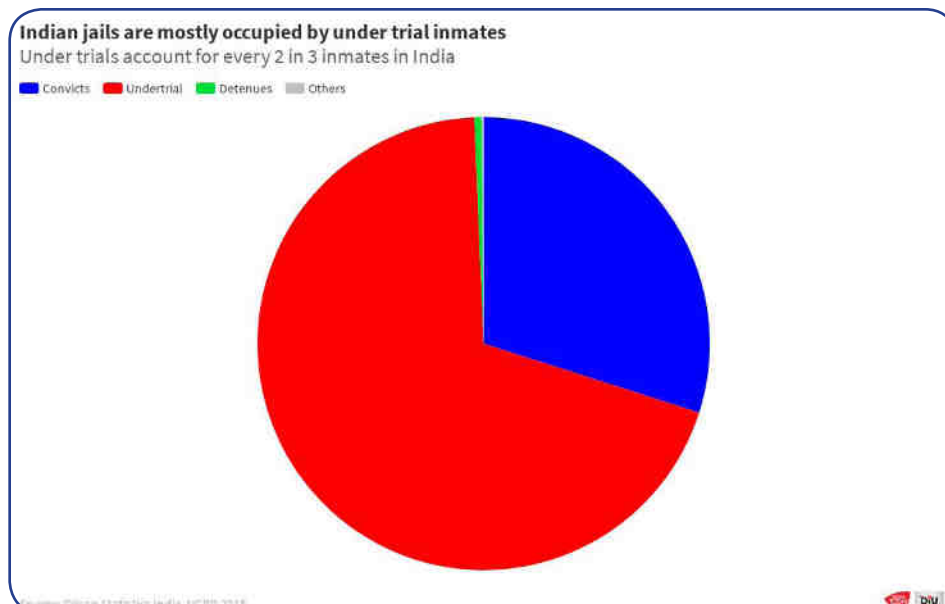
- ◆ High powered committee headed by Gauhati High Court Judge Michael Zothankhuma granted remission to 48 selected prisoners from the central and district jails as these jailbirds are nearing completion of their terms of imprisonment. "Besides, the committee also decided to release 290 under trial prisoners (first-time offenders) on PR Bond, thus bringing the total number of prisoners to be released on bail or parole to 338
- ◆ As many as 11,000 inmates lodged at various jails across the state of Uttar Pradesh will now be released on the basis of the recommendations of a prison committee. This is being done in accordance with an order of the Allahabad High Court which directed the state government not to overcrowd prisons during the novel coronavirus outbreak.

Risk of Increase in Crime

- ◆ In Delhi's Tihar jail (and presumably across India) 82 per cent of the prisoners are undertrials. They come under the accepted jurisprudence of punishments of less than seven years and involving physical harm

being considered non-heinous, a principle accepted in today's Delhi high court judgment. As for convicts, again the same principle is being applied with the executive privilege of granting remissions to those with one to six months left in their sentences.

- ◆ This shows a measured and balanced approach, both in dealing with crime and balancing it with the need to contain the coronavirus pandemic.
- ◆ Although there are several questions regarding prisoners committing crimes when on parole, it generally stems from an outdated view of prisons as a punishment centre rather than a reformatory body.
- ◆ As per the Prison Statistics, 2018, out of 31297 inmates released on parole, only 343 cases of parole absconders were reported (1.1 per cent). The police were able to arrest 150 of these absconders.
- ◆ Statistics reveal that almost 99 per cent of the prison inmates abide by parole. Further, the police machinery is competent to track down the few remaining absconders.



Status of Prisons

As per the data by National Crime Records Bureau (NCRB):

- ◆ Between 2008 to 2018, the prisons had an occupancy rate of 117 per cent. This means, that on average, our prisons were having 17 per cent more prisoners than their full capacity.
- ◆ In 2008, the capacity of our prisons was 2,97,777 inmates, our prisons had an occupancy of 3,84,753 inmates. By 2018, the capacity of prisons was increased to 3,96,223 inmates, however, the occupancy of the prisons increased to 4,66,084.
- ◆ Uttar Pradesh had an occupancy rate of 174 per cent. This means that UP was having 74 per cent more inmates than its full capacity. Delhi ran with an occupancy of 154 per cent, Chhattisgarh with 153 per cent and Uttarakhand with 150 per cent.
- ◆ In total, there were 18 states and UTs having less inmates than their capacity.
- ◆ Among big states, Tamil Nadu had a 60 per cent occupancy, Telangana had an occupancy of 77.1, followed by Andhra Pradesh (79.5), Odisha (86.1) Rajasthan (92) and Bihar (93.3).
- ◆ Nagaland had an occupancy of 30.5 per cent, Tripura had 47.9, followed

by Goa (69.7), Manipur (72.3), Assam (93.2) and Punjab (95.7).

- ◆ According to the data, in 2018, nearly every two of the three inmates in the country was under trial. This means that around 69 per cent of the inmates in India's prison have not been convicted of their crimes by the court.
- ◆ Maximum under trials who are admitted to prisons, stay there for a short while. According to the 2018 prison statistics report, roughly 18 lakh people were admitted to Indian prisons.
- ◆ Data also show that nearly 75 per cent of under trial inmates admitted to jails are released within a year.
- ◆ **Other Findings**

- ◆ India's prisons are understaffed by at least 33 per cent with the highest vacancies found at the officer and correctional staff levels. This has increased the workload of the staff and is having an impact on the 'correctional' aspect of imprisonment. The findings are part of the India Justice Report 2019, an initiative of Tata Trusts.
- ◆ In March 2018, Supreme Court (Bench of justices Madan B. Lokur and Deepak Gupta) has expressed concern about overcrowding in prisons across the country, in some cases

beyond 150 per-cent of the capacity, and asked all the High Courts to consider the issue as it involves "violation of human rights".

Way Forward

- ◆ The Supreme Court taking the matter of prison over crowding at the time of COVID-19 crisis emphasises on the issue of congested prisons which have been highlighted by the apex court from time to time.
- ◆ The over crowding of prisons is not just a matter of judicial concern but at the time of such health related global crisis this issue also pertains to humanitarian cause.

General Studies Paper- II

Topic: Structure, organization and functioning of the Executive and the Judiciary; Ministries and Departments of the Government: pressure groups and formal/informal associations and their role in the Polity.

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.



Q. At the time of COVID-19 crisis Supreme Court has directed states and UTs to release undertrials and certain specific categories of prisoners. In the light of this directive, highlight the major issues affecting Indian jails and the concerns related to the release of prisoners.

3. MPLADS FUNDS TO FIGHT COVID-19 : AN ANALYSIS

Why in News?

- ◆ The Union Cabinet has approved a 30% cut in the salaries of all Members of Parliament and a two-year suspension of the MP Local Area Development (MPLAD) Scheme so that the amount saved can go to the Consolidated Fund of India to fight COVID-19.

Introduction

- ◆ The suspension of the Members of Parliament Local Area Development Scheme (MPLADS) for two years to boost the funding available for the COVID-19 fight is a step in the right direction.
- ◆ The under MPLADS can be utilized under for the following areas:
 - ◆ Infra-Red thermometers (Non-contact) to enable doctors and medical personnel to record and track a person's temperature.
 - ◆ Personal Protection Equipment (PPE) Kits to keep the medical personnel well-protected and enable them to function efficiently by minimizing the risk of transmission.
 - ◆ Thermal imaging scanners or cameras for railway stations, airports and other points of entry which allow detecting of temperature from a safe distance.
 - ◆ CORONA testing kits approved by M/o Health and Family Welfare.
 - ◆ ICU Ventilator and Isolation/Quarantine Wards within their approved facilities.
 - ◆ Face masks, gloves and Sanitizers for medical personnel.

- ◆ Any other medical equipment recommended by Ministry of Health and Family Welfare for prevention, control and treatment of COVID-19.

About Scheme

- ◆ Member of Parliament Local Area Development (MPLAD) Scheme, introduced in December 1993 is an important scheme of Government of India which empowers every Member of Parliament (MP) to spend a certain sum of amount on the development of his/her constituency .
- ◆ Initially, each MP was allotted Rs 1 crore. The amount was raised to Rs 5 crore in 2011-12.
- ◆ Under the scheme, each MP has the choice to suggest to the District Collector for works to the tune of Rs.5 Crores per annum to be taken up in his/her constituency on various social development sectors such as health, education, drinking water, electricity, family welfare, sanitations and so on.
- ◆ The Rajya Sabha Members of Parliament can recommend works in one or more districts in the State from where he/she has been elected.
- ◆ The nominated members of the Lok Sabha and Rajya Sabha may select any one or more districts from any one state in the country for implementation of their choice of work under the scheme.
- ◆ MPLADS is a centrally-sponsored plan scheme fully funded by the government of India. Under this scheme, the funds are released in

the form of grants in-aid directly to the district authorities.

Non-lapsable Fund

- ◆ The funds released under the MPLAD scheme are non-lapsable. This means that if the funds for a particular year are not spent in that year, it will be carried forward to the subsequent years, subject to eligibility.
- ◆ The MPLADS scheme has been challenged before the Supreme Court in the year 2010. The main claim was that MPLADS violates the separation of power between the executive and the legislature as the legislature is endowed with the work of the executive.
- ◆ This claim was in connection to the role of the MP over the local works but the court held that there was no violation of separation of power as the function of the MP to allocate budget for the local projects was recommendable and the actual work was carried out by the local authorities.
- ◆ The exact words of the court were, "Indian Constitution does not recognize strict separation of powers. Even though MPs have been given a seemingly executive function, their role is limited to 'recommending' works and actual implementation is done by the local authorities. Therefore, the scheme does not violate separation of powers. Panchayat raj institutions, municipal as well as local bodies have also not been denuded of their role or jurisdiction."

Changes Brought in due to COVID-19

- ◆ The suspension of MPLADS to raise funds for coronavirus pandemic has brought a positive impact as the MP who, previously, had to focus their attention and resources on MPLADS scheme are now able to focus on the legislative work.
- ◆ The MPs attention and focus was diverted from making policies and legislations at the central level because of the MPLADS scheme.
- ◆ The funds of the MPLADS are reallocated to the Consolidated Fund of India for 2020-2021 and 2021-2022.
- ◆ According to Congress MP Shashi Tharoor, the MPLADS funds have become an instrumental channel through which much-needed and often critical development projects have been implemented in each MP's constituency.
- ◆ Though the amounts available are not large, they enable an MP to respond to local demands and needs of his constituents, of which she, as a popular representative, is naturally more conversant than the central or even state government.

Critics

- ◆ The suspension of MPLADS for two years - one of the many measures that the central government has taken in preparation for a fight against coronavirus and its adverse impact on the economy - has evoked sharp criticism from

many quarters, especially from opposition's MP.

- ◆ The suspension of the MPLADS would help government save a total of around Rs 8,000 crore in two years. The government has allocated Rs 3,960 crore, or Rs 5 crore to each MP (in both houses of Parliament), for 2020-21
- ◆ Critics have termed the move as anti-federal and an attempt by the government to centralize the power, rendering MPs powerless.
- ◆ Most opposition MPs have flayed the government for hijacking the resources they had for local level intervention in times of such a health crisis.
- ◆ The Second Administrative Reforms Commission recommended its abrogation altogether, highlighting the problems of the legislator stepping into the shoes of the executive. The current suspension gives some scope for a reconsideration of the scheme in its totality.

Pre and Post Changes Impact

- ◆ When MPLADS was not suspended by the government, it was working for 26 years. The primary reason for its creation was for the rural development.
- ◆ Initially, the scheme was administered by the Ministry of Rural Development but in 1994 the task of administering the MPLADS scheme was transferred to Ministry of Statistics and Programme Implementation.

- ◆ The suspension of MPLADS for two years to boost the funding available for the COVID-19 fight is a step in the right direction. It may appear at first blush that the decision may undermine the decentralised manner of funding local area development. However, past experience has been that some members do not utilise their full entitlement and that there is a gap between recommendation made by members and implementation by the administration under this scheme. The immediate benefit now is the freeing up of about Rs. 7,900 crore over a two-year period so that it can be spent on boosting the health infrastructure needed to combat the pandemic.

Way Forward

- ◆ The transfer of these sums to the Consolidated Fund of India would help judicious deployment anywhere in the country, based on an assessment of the varying needs in different regions, it would redound to the government's credit if the genuine efforts made by members to help their constituents are not frustrated. It should also see to it that allocations are non-discriminatory.

General Studies Paper- II

Topic: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.



Q. The suspension of MPLADS fund for two years will boost the health infrastructure needed to combat the COVID-19 pandemic. Critically evaluate.

4. SPIKE IN DOMESTIC VIOLENCE IN THE TIME OF LOCKDOWN

Why in News?

- ◆ The COVID-19 nationwide lockdown, which has left many facing job losses, uncertainty over salaries, forced isolation and stressed households has resulted in a steep rise in violence against women.

Introduction

- ◆ Corona Virus has claimed more than one Lakh lives around the world. It forced down the world to close its borders and stay home because of the fear of community spread of the Virus.
- ◆ But, it is well-documented that during a war, a natural disaster or a pandemic, women's bodies bear the worse brunt of the crisis. Domestic violence against women is already widespread and under-reported in India.
- ◆ Now, at the time of the COVID-19 pandemic, the United Nations recognises domestic violence against women as a "shadow pandemic".
- ◆ The COVID-19 pandemic has triggered a huge spike in domestic violence against women in China, Australia, France, the U.K., Spain, and Bangladesh, among others.
- ◆ In India, too, the National Commission for Women (NCW), which receives complaints from across the country, has recorded a more than twofold rise in gender-based violence.
- ◆ The total complaints from women rose from 116 in the first week of March (March 2- 8), to 257 in the final week of March (March 23-April 1). Complaints of rape or attempted rape have risen sharply from two to 13, while cases of domestic violence have increased from 30 to 69 over the same comparative period.

- ◆ Simultaneously, there has been an almost threefold increase in police apathy towards women's complaints with the NCW receiving 16 complaints on the issue as compared to six earlier, as the police are busy enforcing the lockdown to curb the spread of COVID-19.

- ◆ These cases may only be the tip of the iceberg, as many women will not be able to reach out because of restrictions on movement as well as a lack of privacy within homes.
- ◆ Similarly, complaints relating to the "right to live with dignity" too have doubled, rising from 35 cases to 77. Such cases could pertain to discrimination on the basis of gender, class or caste or all three of them combined.

Reasons Behind

- ◆ Domestic violence is rooted in the inequities of power and control. The abusers feel an enormous loss of power and control over their own lives due to the pandemic. They vent their frustration on the women in the house. Mental health issues arise out of isolation as well as reactive depression, but instead of recognising these issues and seeking help, people become violent.
- ◆ The primary reason for an increase in the domestic violence cases amidst corona virus distress, disruption of social and protective networks, and decreased access to services all can exacerbate the risk of violence for women.
- ◆ Moreover the women in an abusive relationship and their children will be exposed to violence is dramatically increased, as family members spend more time in close contact and families cope with additional stress and potential economic or job losses.

- ◆ Also the women may have less contact with family and friends who may provide support and protection from violence. Women henceforth bear the brunt of increased care work during this pandemic. School closures further exacerbate this burden and place more stress on them.

- ◆ The disruption of livelihoods and ability to earn a living, including for women (many of whom are informal wage workers) will decrease access to basic needs and services, increasing stress on families, with the potential to exacerbate conflicts and violence. As resources become scarcer, women may be at greater risk for experiencing economic abuse.
- ◆ Not just in India, but China, Italy, France and other countries have also witnessed a rising number of cases linked to domestic violence. Half of them are unreported. The problem is the mental condition of the person who is the perpetrator.
- ◆ The victims are not only unable to speak out because they are quarantined at home with the perpetrators, but also because the lockdown prevents them from seeking help outside.
- ◆ The traditional forms of support are now not available to domestic violence victims. They don't go to their parental homes for fear of infecting elderly parents. Shelter homes are crowded and so they are vulnerable to greater infection there. The police force is already overburdened with ensuring that people comply with the lockdown. Hospitals do not have the space or time to look at domestic violence cases.

Measures Taken

- ◆ The French government has

announced an additional EUR 1 million to fund relief organisations working against domestic abuse, to help them cater to the increased number of requests for help.

- ◆ In Spain and France, women can go to a pharmacy and request a “Mask 19” — a code word that will alert the pharmacist to contact the authorities.
- ◆ In Italy, the government has launched an app that enables domestic violence victims to seek help without making a phone call. A proposal to allocate EUR 4 million for shelters for victims is also being considered.
- ◆ The Scottish government also promised support for victims of domestic violence during the outbreak, and announced grants of over GBP 1.5 million for Scottish Women’s Aid and Rape Crisis Scotland over six months to ensure that access to support services is maintained.
- ◆ In the United Kingdom, the police are encouraging victims to use what they are calling a silent call. By calling the emergency number 999 and then dialing 55 the police say that they will recognize the call as “a cause for concern”.
- ◆ In Australia, the government has given a \$142 million boost in funding to tackle domestic violence.
- ◆ In India too, the National Commission for Women (NCW) has launched a WhatsApp number - 7217735372 to report cases of domestic violence. In addition to the online complaint links and emails which are already optional.

Relevant Laws in India

- ◆ India has quite a stringent law for the protection of women from being suppressed and violated at homes.

- ◆ Section 498A of The Indian Penal Code has made domestic violence a criminal offence. Domestic violence include physical abuse, mental torture through threats to her or her loved ones (such as children), denying the woman food, locking her in or out of the house as punishment and demanding perverse sexual acts against the woman’s will. Punishment can be imprisonment of up to three or fine or both.
- ◆ Protection of Women from Domestic Violence Act, 2005 acknowledges every woman’s right to be in a home without violence.
- ◆ In 2013 Criminal Law Amendment Act provides for harsher and stricter punishment for those violating the law for protection of women. It included a number of crimes such as acid attack, stalking, voyeurism and publicly and forcefully disrobing a woman.

International Provisions

- ◆ The Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) is an international treaty adopted in 1979 by the United Nations General Assembly.
- ◆ CEDAW provides for safeguards for the protection of women.
- ◆ It focuses on various subjects such as nondiscrimination, sex, stereotypes, women’s right in public sphere, right to nationality, describes the economic and social life of women, equality in marriage, and family life. It established a committee on the Elimination of Discrimination against Women as well as the states parties’ reporting procedure.

Way Forward

- ◆ Priority measures to help domestic violence victims, without detracting from the overall anti-COVID-19 strategy of lockdown, should be initiated by the government and steps to protect victims of domestic violence be made a part of overall anti-COVID-19 action plans.
- ◆ Further, conducting of mass virtual counseling for the couples so that they can understand the value of the relationship they are in. The counselors can make them understand the legal consequences of the acts and thus, we can stop the crime before it takes place.
- ◆ UN Women has said that “helplines, psychosocial support and online counselling should be boosted, using technology-based solutions such as SMS, online tools and networks to expand social support, and to reach women with no access to phones or Internet.”
- ◆ The electronic media can raise awareness in regional language infomercials, since domestic violence is a crime under the Indian Penal Code. SOS messaging to police already exists in several cities, but this should be enhanced with geolocation facilities.
- ◆ The key is to dig down and cut the root, because it seems to be weed which grows back. Hence, cutting it from the top would not help in the long run, until and unless we get to the root cause of the problem, this will continue to happen.

General Studies Paper- II

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.



Q. “It is well-documented that during a war, a natural disaster or a pandemic, women’s bodies bear the worse brunt of the crisis.” Discuss it in the context of rising number of domestic violence cases during COVID-19 lockdown.

5. CORONAVIRUS BRINGS HEALTHCARE SECTOR INTO THE SPOTLIGHT

Why in News?

- ◆ The Coronavirus pandemic has highlighted the need for rejuvenating health sector of India.
- ◆ The rejuvenation of the health sector can provide the nucleus for remaking of India, post Coronavirus.

Introduction

- ◆ Doctors and healthcare workers are the first line of defense of our battle against COVID-19. It is,

- Indian healthcare delivery system is categorised into two major components - public and private. The Government, i.e. public healthcare system comprises limited secondary and tertiary care institutions in key cities and focuses on providing basic healthcare facilities in the form of primary healthcare centres (PHCs) in rural areas.
- The private sector provides majority of secondary, tertiary and quaternary care institutions with a major concentration in metros, tier I and tier II cities.

therefore, painful to see that many of them got the infection because of lack of essential equipments.

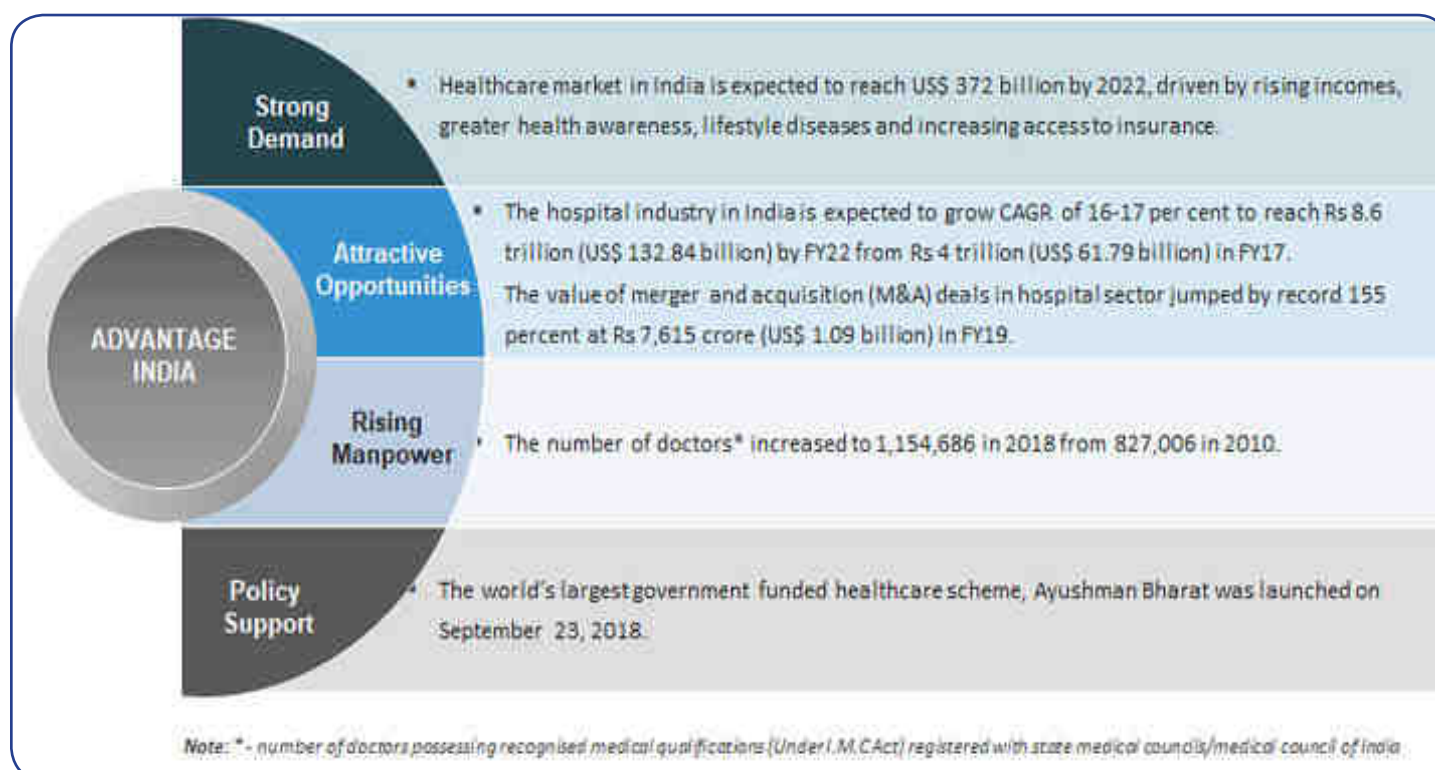
- ◆ The country faces an acute shortage of essential equipment like hospital beds, ventilators, testing kits, masks etcetera. Efforts are being made to meet the shortages but these are at best short term measures.

Features of India's Health Sector

- ◆ India spends a little over 1% of GDP on the health. This is the lowest amongst the BRICS countries. US spend 8.5%, Germany 9.4% and UK 7.9% of GDP on health. Even our neighbouring countries spend more. The Government of India is planning to increase public health spending to 2.5 per cent of the country's GDP by 2025.
- ◆ India ranks 145th among 195 countries in terms of quality and accessibility of healthcare.

- ◆ According to the World Bank figures, India spends one of the lowest amounts (USD 23) in per capita. Public health expenditure in India at US Dollars 23 is one of the lowest in comparison to other developing countries like Indonesia (USD 38), Sri Lanka (USD 71), and Thailand (USD 177). On the World Bank's Index of universal health coverage, India ranks 143 among 190 countries in terms of per capita expenditure on health.

- ◆ A large section of India's population has no health coverage, although the situation is changing with the government's flagship health insurance scheme PMJAY, Ayushman Bharat health insurance scheme for the vulnerable sections of the society.
- ◆ As per the National Sample Survey 2015, most hospitalisation cases were seen in private hospitals (68% in urban and 58% in rural areas), these hospitals are mostly



unregulated which is one of the factors leading to high costs of treatment. Policy measures are needed to regulate the private healthcare sector.

- ◆ The government will need to spend approximately 3.8 % of the GDP for universalising healthcare.
- ◆ Healthcare infrastructure in India is in poor condition and needs to be upgraded. As of 2018, India had 5624 community health centres, 25,743 primary health centres and 1,58,417 sub-centres. Most of these are in extremely poor conditions.
- ◆ India is a leading producer and exporter of pharmaceuticals. According to Indian Pharmaceutical Alliance (IPA) The Indian pharmaceutical industry is aspiring to touch USD 120-130 billion by 2030 from the current USD 38 billion.
- ◆ Indian medical tourism market is growing at the rate of 18 per cent year on year and is expected to reach US\$ 9 billion by 2020. There is a significant scope for enhancing healthcare services considering that healthcare spending as a percentage of Gross Domestic Product (GDP) is rising.

Government Initiatives

Some of the major initiatives taken by the Government of India to promote Indian healthcare industry are as follows:

- ◆ The Government of India aims to increase healthcare spending to three percent of the Gross Domestic Product (GDP) by 2022.
- ◆ In February 2019, the Government of India established new All India Institute of Medical Sciences (AIIMS) at Manethi, District Rewari, Haryana at a cost of Rs 1,299 crore (US\$ 180.04 million).

◆ The Union Cabinet approved setting up of 'National Nutrition Mission' (NNM) with a three-year budget of Rs 9,046 crore (US\$ 1.29 billion) to monitor, supervise, fix targets and guide the nutrition related interventions across ministries.

◆ On September 23, 2018, Government of India launched 'Pradhan Mantri Jan Arogya Yojana' (PMJAY), to provide health insurance worth Rs 500,000 (US\$ 7,124.54) to over 100 million families every year.

◆ In August 2018, the Government of India has approved 'Ayushman Bharat-National Health Protection Mission' as a centrally sponsored scheme contributed by both center and state government at a ratio of 60:40 for all States, 90:10 for hilly North Eastern States and 60:40 for Union Territories with legislature. The center will contribute 100 per cent for Union Territories without legislature.

◆ The Government of India has launched 'Mission Indradhanush' with the aim of improving coverage of immunisation in the country. It aims to achieve atleast 90 per cent immunisation coverage by December 2018 which will cover unvaccinated and partially vaccinated children in rural and urban areas of India.

Achievements

Following are the achievements of the government:

- ◆ As of July 2019, around 125.7 million families have enrolled as beneficiaries under 'Pradhan Mantri Jan Arogya Yojana' (PMJAY). The scheme has enrolled 16,085 hospitals, including 8,059 private hospitals and 7,980 public hospitals. It to include 19 Ayush packages in the treatment scheme.
- ◆ As of September 2019, about 50 lakh people have received free

treatment under the 'Ayushman Bharat - Pradhan Mantri Jan Arogya Yojana'.

- ◆ The number medical colleges in India increased to 529 in FY19 from 381 in FY13.
- ◆ According to Sample Registration System Bulletin-2016, India has registered a 26.9 per cent reduction in Maternal Mortality Ratio (MMR) since 2013.

Road Ahead

- ◆ India is a land full of opportunities for players in the medical devices industry. India's healthcare industry is one of the fastest growing sectors and it is expected to reach \$280 billion by 2020.
- ◆ The country has also become one of the leading destinations for high-end diagnostic services with tremendous capital investment for advanced diagnostic facilities, thus catering to a greater proportion of population.
- ◆ Besides, Indian medical service consumers have become more conscious towards their healthcare upkeep.
- ◆ Indian healthcare sector is much diversified and is full of opportunities in every segment which includes providers, payers and medical technology.
- ◆ With the increase in the competition, businesses are looking to explore for the latest dynamics and trends which will have positive impact on their business.
- ◆ The hospital industry in India is forecasted to increase to Rs 8.6 trillion (US\$ 132.84 billion) by FY22 from Rs 4 trillion (US\$ 61.79 billion) in FY17 at a CAGR of 16-17 per cent.
- ◆ India's competitive advantage also lies in the increased success rate of Indian companies in getting Abbreviated New Drug Application (ANDA) approvals.

- ◆ Industry 4.0 and new technologies like big data analytics, artificial intelligence et cetera are revolutionising drug research. These need to be incorporated by Indian Pharma manufacturers.
- ◆ Private health care sector in India should be properly regulated to ensure minimum standards, quality and affordability.
- ◆ A strong and robust cadre of health workers, like Asha workers, should be raised so that they can reach to every panchayat and household. Healthcare services should be provided at the doorstep to the extent possible. Mobile health clinics could also be considered.

Doctors and professionals should reach the grassroots level rather than the other way round.

- ◆ India should build mutually beneficial cooperative arrangements in the health sector with the neighbouring countries whose demands are very similar to that of India. The health sector can help strengthen India's neighbourhood policy.
- ◆ A holistic policy, cutting across the numerous ministries and departments, centre and the states, government and the public sector, NGOs, educational institutions, industry and several other stakeholders will be required

to rejuvenate the health sector in India. Policy space is highly fragmented and needs to be consolidated.

General Studies Paper- II

Topic: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

Topic: Issues relating to development and management of Social Sector/ Services relating to Health, Education, Human Resources.



Q. The fight against Coronavirus pandemic has highlighted the need of rejuvenating health sector of India. Elaborate.

6. CORONAVIRUS RE-MODELLING GLOBAL COOPERATIONS

Why in News?

- ◆ Economies, travel, healthcare systems, communities and lives are not the only wreckage that COVID-19 is leaving in its wake. Predictably, the virus has begun to exacerbate cracks in the existing international multilateral system that underpins much of our global, regional architectures and mechanisms. For example, World Health Organisation (WHO) and United National Security Council (UNSC) come under great pressure and are looking at new ways to maintain their relevance.

Understanding Multi-lateralism

- ◆ When we talk about multilateralism then we mean more than a set of

states combining their capabilities to achieve some objective.

- ◆ We also have in mind the legitimacy that comes from states acting in concert because their objectives are not particularistic national interests but common interests.
- ◆ Multilateralism is legitimate in itself because it is now deeply embedded in the constitutional structure of contemporary global order.
- ◆ The current COVID-19 crisis is even more deserving of a multilateral response, because it presents challenges above and beyond those previous threats. In what amounts to an economic perfect storm, the pandemic has combined with preexisting recessionary pressures, the broader disruption to global

trade, and a new and somewhat unexpected complication like sharp drop in oil prices.

Instances of Emerging United Response

- ◆ The sight of a giant Russian military transport aircraft landing at New York's John F. Kennedy International Airport must have been astounding to many who saw it. It was delivering ventilators and personal protection equipment from Russia to the country that is the most powerful in the world, and has the largest economy and biggest military budget.
- ◆ Another example of the current "virus diplomacy" can be found in the Gulf, where the UAE, Kuwait and Qatar have offered humanitarian aid to Iran to help it combat the outbreak.

- ◆ Turkey is engaged in an intense and multilayered fight against the pandemic, and the effects it is having on social and economic life. In fact, while Ankara battles the coronavirus crisis at home, it has also sent medical aid to a number of countries.
- ◆ Following the announcement of a \$5 trillion package by the G-20 countries and \$160 billion from the World Bank had spurred multilateral institutions to respond.
- ◆ Some developing countries, such as Morocco and Senegal, are demonstrating a reconfiguration of strength, ability, and resilience.

India's International Contribution

- India coming up with SAARC COVID Fund in South Asia is a much welcome initiative and imposition of India's leadership role at the time of global crisis in South Asia.
- Also seen the delivering of medical supplies and hospital consumables along with professionals by India to many nations such as Bangladesh, Sri Lanka and Maldives.
- India has airlifted the citizens of neighbouring countries from Covid epicentres across the globe and delivered them to their respective countries.

Multilateralism Under Pressure

This global crisis certainly presents a golden opportunity for those who oppose globalization and call for more nationalistic policies. It will not be a surprise if the populist rhetoric that was already spreading in a number of countries before the coronavirus crisis is amplified in the post-pandemic era.

◆ Failure of UNSC

- ◆ Last month, as the rotating chair of the UNSC, China blocked any discussion of the Covid crisis. Beijing insisted that the crisis was not a matter of international peace and security that the UNSC ought to bother itself

with. Great powers do what they can, for they can get away with it. With its veto power, Beijing can simply prevent the UNSC from doing anything against China. But what about the secretary general and the UN bureaucracy?

- ◆ UN Secretary General Antonio Guterres, for example, jumped quickly into several matters like the Indo-Pak arguments over Kashmir among others. But when it comes to China's role in the spread of the coronavirus, Guterres can't seem to find the words. He speaks of a generational challenge that the virus poses to humanity. The UNSG's exhortations are to the collective and consciously avoid getting into anything specific.

◆ Failure of WHO

- ◆ The situation at the WHO is a lot worse. The WHO's actions in response to COVID-19, in part, stemmed from its overly deferential stance towards China, which is its second-biggest financial contributor among 194 member states. The WHO put out questionable guidance on how to deal with the coronavirus, it was slow to communicate the magnitude of the threat, and it whitewashed the Chinese government's early handling of the crisis. Japan's deputy PM Taro Aso blisteringly called it the Chinese Health Organisation, excoriating it for refusing to declare COVID-19 a global emergency in January, which would have bought time for everyone.

- ◆ **Regional organisations** too, are having a tough go at it. The European Union is scrambling to come up with a joint response to COVID-19 as it finds itself in the frontlines of the fight. Previous

attempts bore little fruit as members continue to enforce their own measures, often with little consultation with each other.

Changing International Relations

- ◆ There is a chance for a coordinated push under the auspices of the G20 or the International Monetary Fund. Jointly orchestrated monetary and fiscal policies would provide not just immediate stimulus but also a boost in confidence, as would an agreement to reverse the protectionist policies of the past few years.
- ◆ A mutual ceasefire in the trade war and a return to multilateral trade negotiations would directly boost economic activity by restoring confidence and spurring investment. It would show that the international community is still capable of coming together in meaningful ways to fight a global crisis.
- ◆ While some impact on the futures of the nation-state and the international system is inevitable, uncertainty regarding the coronavirus crisis' full economic impact looms heavily. Major world powers are grounded in a zero sum game, reflecting already tense geopolitics and reaffirming an uncontested gap in international leadership.
- ◆ Two factors will require leaders to profoundly revisit and review the nation state's political agendas.
 1. The first relates to changes in the moral and contractual links between the nation-state, represented by political elites, and society as a whole, represented by civil society and economic actors.
 2. The second relates to the international system's ongoing

path towards what Emeritus Professor of International Relations at the London School of Economics Barry Buzan calls “apolarity.” In other words, the surging coronavirus pandemic is highlighting a leadership vacuum.

Way Forward

- ◆ All countries and economies, especially the least developed

ones, have been put to a severe test by the pandemic, which has made multilateralism even more important as it promotes coordination and cooperation.

- ◆ The current crisis is even more deserving of a multilateral response, because it presents challenges above and beyond those previous threats.

General Studies Paper- II

Topic: Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

Topic: Important International institutions, agencies and fora- their structure, mandate.



Q. The multilateralism of the previous century is under pressure global Covid crisis. Comment on the pressures on multiculturalism and how the nations across the globe are responding to it.

7. BIOMINING TO ADDRESS THE ISSUE OF LEGACY WASTE

Why in News?

- ◆ National Green Tribunal (NGT) has ordered the committee to examine and evaluate the amount of damage done to the environment by the dump sites having legacy wastes, in Delhi.
- ◆ The committee has representatives from three bodies, namely, Central Pollution Control Board, National Environmental Engineering Research Institute (NEERI) and IIT Delhi.

Biomining : Introduction

- ◆ Biomining is the process of using microorganisms (microbes) to extract metals of economic interest from rock ores or mine waste. Biomining techniques may also be used to clean up sites that have been polluted with metals.
- ◆ Most current biomining operations target valuable metals like copper, uranium, nickel, and gold that are commonly found in sulfidic (sulfur-bearing) minerals. Microbes are

especially good at oxidizing sulfidic minerals, converting metals like iron and copper into forms that can dissolve more easily.

- ◆ Other metals, like gold, are not directly dissolved by this microbial process, but are made more accessible to traditional mining techniques because the minerals surrounding these metals are dissolved and removed by microbial processes.
- ◆ When the metal of interest is directly dissolved, the biomining process is called “bioleaching,” and when the metal of interest is made more accessible or “enriched” in the material left behind, it is called “biooxidation.” Both processes involve microbial reactions that can happen anywhere the microbes, rocks and necessary nutrients like oxygen occur together.
- ◆ In current context the technique is used for of extraction and segregation of minerals and useful materials from mounds of waste. It

can be used to extract minerals like plastic, rubber, metals, textile, glass and organic compounds.

- ◆ The process involves excavation of the waste using JCB, sieving, segregation and baling.
- ◆ The waste is segregated into various grades depending on the quality and size of the plastic before baling and transporting. Also, the segregation of waste into organic and inorganic, is done, depending upon the composition on the landfill site. While organic waste, which can be decomposed, is used as an earthfill, the other is used for purposes such fuel for cement factories.

Institutional Nudge

Biomining method is proposed by the Central Pollution Control Board (CPCB) for the effective disposal of legacy waste. The decision has been taken after a directive from the NGT, during its meeting on June 14, asking the corporation to process the legacy

waste. Biomining will be done after scrutinizing by the state pollution control board (PCB).

Legacy wastes— Waste that has been collected and kept for years at some barren land or a place dedicated for landfill (an area already to dump the country waste). This waste can be roughly grouped into four categories: contained and/or stored waste, buried waste, contaminated soil and groundwater, and contaminated building materials and structures.

Advantages of Biomining

- ◆ Biomining is a very cost effective method as the garbage heap is segregated into numerous blocks or sections and the air percolates through gaps to let the microbes to their work.
- ◆ The microbes are sprayed over the garbage mounds and the garbage are tossed and turned many times to avoid the waste to leachate.
- ◆ Biomining can be done on a waste which is not being segregated and is at a semi decomposed state.
- ◆ Almost 40% reduction of the waste can be achieved by organic decomposition.
- ◆ The Indore model refers to a successful initiative carried out by the Indore municipal corporation to clear thousands of tonnes of garbage in an 100-acre landfill through biomining.

Other Uses of Biomining

- ◆ New biomining techniques that do not involve oxidation are being tested, which would enable large-scale biomining for different types of minerals and metals.
- ◆ Some researchers and companies are testing the use of biomining

for recycling, to recover valuable elements from wastewater and electronic waste.

- ◆ Several smaller operations recover metals from existing acid mine drainage. These operations recover economically valuable metals that would otherwise cause pollution.
- ◆ In Europe, the BIOMORE project is studying the feasibility of biomining deep underground to avoid having to excavate the rocks themselves.

Waste Management in India

- ◆ Waste management rules in India are based on the principles of "sustainable development", "precaution" and "polluter pays". These principles mandate municipalities and commercial establishments to act in an environmentally accountable and responsible manner—restoring balance, if their actions disrupt it.
- ◆ The increase in waste generation as a by-product of economic development has led to various subordinate legislations for regulating the manner of disposal and dealing with generated waste are made under the umbrella law of Environment Protection Act, 1986 (EPA).
- ◆ Waste management market comprises of four segments –
 - ◆ Municipal Waste;
 - ◆ Industrial Waste;
 - ◆ Bio- Medical Waste; and
 - ◆ Electronic Waste Market.
- ◆ All these four types of waste are governed by different laws and policies as is the nature of the waste.

- ◆ In India waste management practice depend upon actual waste generation, primary storage, primary collection, secondary collection and transportation, recycling activity, treatment and disposal.
- ◆ Municipality corporations play very important role in waste management in each city along with public health department.

Way Forward

- ◆ Waste management specialists said that across the world recycling and reprocessing of waste is being implemented to deal with the land scarcity challenge.
- ◆ Landfills are now turning into garbage mountains of monumental heights causing environmental and geographical risks.
- ◆ In addition to that the rising garbage piles and shortage of landfills are causing acute problems for garbage disposal to garbage management.
- ◆ Landfills are just dumping ground for waste, but waste treatment is a must for the most sustainable solution. Biomining is one of the techniques that addresses the issue of waste management. For it, the proactive citizens are needed to dispose waste in a segregated manner and to opt for organic alternatives wherever possible.

General Studies Paper- III

Topic: Conservation, environmental pollution and degradation, environmental impact assessment.



Q. Landfills are one of the major problems which have cropped up with the rise of urbanisation in India. Biomining is one such technique that is prescribed by CPCB and NGT. Describe the technique and its adoption in India.

SEVEN BRAIN BOOSTERS

1. 'BHARAT PADHE ONLINE' CAMPAIGN

1. Why in News?

- The Ministry of Human Resource Development (HRD) has recently launched a week long 'Bharat Padhe Online' campaign for Crowd sourcing of ideas for improving online education ecosystem of India on 10th April 2020
- At the time of COVID-19 lockdown, the online infrastructure can help the students to continue with their studies unhindered.



2. About Campaign

- The campaign aimed to invite all the best brains in India to share suggestions/solutions directly with HRD Ministry to overcome constraints of online education while promoting the available digital education platforms like 'SHAGUN', 'SWAYAM', etc.
- Students and teachers were the main target audience in this campaign.
- As per the Campaign, students who are currently studying in schools or higher educational institutions are the ones engaging with the existing digital platforms offering various courses etc. on a daily basis.
- They shared what is lacking in the existing online platforms and how we can make them more engaging.

4. SWAYAM

- An initiative of Government of India for the students pursuing education from class 9th to 12th
- Also for the aspirants seeking undergraduate and post-graduate level degree, SWAYAM facilities study material at one destination.
- Students can access study material in the form of Video lectures, reading material, self-assessment tests, online discussions and doubt sessions.
- The portal is connected to national coordinators such as AICTE, NCERT, IGNOU, UGC, NPTEL, NIOS, IIMB, NITTTR, and CEC for delivering updated and excellent quality content to the aspirants.

5. Other Platforms

- National Academic Depository (NAD) run by UGC that has tie up with approximately 55 school boards, 359 state universities, 123 deemed universities, 47 central universities and 260 private universities.
- National Digital Library of India run by Ministry of Human Resource Development (MHRD) under its National Mission on Education through Information and Communication Technology (NMEICT) to provide content to not just school students but also students pursuing higher education and Ph.D. level education.

3. SHAGUN

- SHAGUN is an online junction under which the Department of School Education in the Government of India and all States and Union Territories (UTs) have launched several e-learning platforms.
- The primary aim of the SHAGUN initiative is to facilitate both teachers and students with a platform where they can interact, however through digital medium for further learning.
- 'SHAGUN' is coined from two different words i.e. 'Shala', meaning Schools and 'Gunvatta' meaning Quality.
- There are three e-learning platforms which comes under the purview of SHAGUN:
 - National Repository of Open Educational Resources (NROE)
 - ❖ Students visiting NROR platform will get an exposure to e-libraries, e-books, e-courses, chance to participate in events online, and theme based education.
 - ❖ In fact, there is a feature through which learning of students can be out to test through 'assignments' also.
 - National Digital Infrastructure for Teachers (DIKSHA)
 - ❖ DIKSHA portal to equip teachers from 1st class to 12th class into the world of e-learning. The platform is available for both teachers and students requiring learning material.
 - E-Pathshala
 - ❖ E-Pathshala: Through this web-portal, students from class 1st to 12th will be able to access no less than 1886 audios, 2000 videos, 696 e-books (e-Pubs) and 504 Flip Books. The digital repository has been made available by NCERT to make sure that the students do not miss out on any important concept to be taught in the class.

2. CYTOKINE STORMS

1. Why in News?

- In the 2019–20 coronavirus pandemic, a number of deaths due to COVID-19 have been attributable to cytokine release storms.



2. Introduction

- The immune systems in our bodies protect us from bacteria, viruses, and parasites by removing them from our systems. The immune system gets activated by things that the body does not recognise as its own. These things are called antigens, and include bacteria, fungi and viruses.
- Normally, when the human body encounters a germ, the immune system attacks the invader and then stands down. But sometimes, that orderly army of cells wielding molecular weapons gets out of control, morphing from obedient soldiers into an unruly, torch- and pitchfork-bearing mob.
- Cytokines are signalling proteins that are released by cells and play an important role in normal immune responses.
- Cytokine storm is characterised by the overproduction of immune cells and the cytokines themselves because of a dysregulation in the process.
- A severe immune reaction, leading to the secretion of too many cytokines in the bloodstream, can be harmful since an excess of immune cells can attack healthy tissue as well.

3. Symptoms

- Symptoms include fever, fatigue, loss of appetite, muscle and joint pain, nausea, vomiting, diarrhea, rashes, fast breathing, rapid heartbeat, low blood pressure, seizures, headache, confusion, delirium, hallucinations, tremor, and loss of coordination
- Lab tests and clinical monitoring show low blood oxygen, widened pulse pressure, increased cardiac output (early) potentially diminished cardiac output (late).

4. Cytokine Storms and COVID-19

- Cytokine storms are not exclusive to coronavirus patients. It is an immune reaction that can occur during other infectious and non-infectious diseases as well.
- In the case of any flu infection, a cytokine storm is associated with a surge of activated immune cells into the lungs, which, instead of fighting off the antigen, leads to lung inflammation and fluid build-up, and respiratory distress. And immunologists in Hefei reported similar results among patients who died, as well as high levels of active, damaging immune cells spewing dangerous cytokines in the blood of Covid-19 patients who required intensive care.
- Increased pro-inflammatory cytokine responses against human coronaviruses such as SARS-CoV-2 (which is responsible for the current COVID-19 pandemic) can result in acute lung injury and acute respiratory distress syndrome (ARDS).
- If the clinical features of Cytokine Storms Syndrome are not recognised and adequate treatment is not promptly instituted, multiple organ failure can result.

5. Taming the Storm

- Steroids are often the first choice of treatment. They act broadly to dampen the immune system — but, of course, that system is needed at a lower intensity to fight invaders.
- In the case of COVID-19, it's not yet clear if steroids are beneficial or harmful.
- There are also medications that interfere with specific cytokines. If steroids are an atom bomb, these drugs are targeted missile strikes. The idea is that they'll leave the good immune response intact.
- Researchers are initiating several clinical trials of cytokine blockers for COVID-19. Tocilizumab is under further study in Italy and China; tocilizumab and sarilumab (Kevzara), another antibody to the IL-6 receptor used for rheumatoid arthritis, are both being tested in Denmark; and emapalumab and anakinra are undergoing trial in Italy.
- Interim guidelines from the US Centers for Disease Control and Prevention mention that high CRP and ferritin levels may be correlated with more severe illness; World Health Organization guidelines make no mention of markers for a cytokine storm.
- The sooner doctors can treat the raging storm, the better the results will be.

3. THIRD MASS BLEACHING OF GREAT BARRIER REEFS

1. Why in News?

- The Great Barrier Reef one of the seven wonders of the natural world, has suffered the most widespread (mass) bleaching ever recorded due to rising temperatures caused by climate change.



2. Bleaching of Great Barrier Reef

- In February 2020, record-high sea temperatures at Australia's Great Barrier Reef caused the most widespread coral bleaching event at the reef ever.
- Unfortunately, this was also the third such major bleaching in five years, raising concerns over the fragile corals' ability to keep rebounding against worsening marine conditions.
- To put it into perspective, there have only ever been five recorded bleaching events at the Great Barrier Reef. The first two were in 1998 and 2002, and then there was a 14-year gap before the 2016 and 2017 events. The latter two resulted in the death of almost half of the famed reef's corals in just two years.
- Historically, tropical coral reefs bleach more often when the Pacific Ocean is in a phase known as El Niño. This latest bleaching on the reef has hit during a neutral phase in the cycle.
- The gap between one event and the next is shrinking, not just for the Great Barrier Reef, but reefs throughout the tropics. It is important, because it takes a decade or so for a half-decent recovery of even the fastest-growing corals. The slowest ones take several decades

3. Effect on Corals

- When water is too warm, corals expel the algae (zooxanthellae) living in their tissues causing the coral to turn completely white.
- When a coral bleaches, it is not dead. Corals can survive a bleaching event, but they are under more stress and are subject to mortality.
- Bleached corals are injured and starving and they are more susceptible to disease. They will also reduce their reproductive output in a bleaching year and the year after.

4. Climate Change and Corals

- Scientific evidence now clearly indicates that the Earth's atmosphere and ocean are warming, and that these changes are primarily due to greenhouse gases derived from human activities.
- As temperatures rise, mass coral bleaching events and infectious disease outbreaks are becoming more frequent.
- Carbon dioxide absorbed into the ocean from the atmosphere has already begun to reduce calcification rates in reef-building and reef-associated organisms by altering seawater chemistry through decreases in pH. This process is called ocean acidification.
- Climate change will affect coral reef ecosystems, through sea level rise, changes to the frequency and intensity of tropical storms, and altered ocean circulation patterns.
- When combined, all of these impacts dramatically alter ecosystem function, as well as the goods and services coral reef ecosystems provide to people around the globe.
- Increased greenhouse gases in the atmosphere cause the planet to warm, and 90 percent of that extra heat is taken up by oceans. As corals are extremely sensitive to ocean temperatures, raising the water temperature by even a couple of degrees can still result in mass coral bleaching. And while bleaching does not kill the coral, it weakens them, making them vulnerable to disease.
- There's so much heat that has been absorbed in the upper ocean that all the coral reefs are much closer now to their bleaching threshold. As result, it's very easy to tip them over.
- Sea level rise may lead to increases in sedimentation for reefs located near land-based sources of sediment. Sedimentation runoff can lead to the smothering of coral.
- Changes in storm patterns leads to stronger and more frequent storms that can cause the destruction of coral reefs.
- Changes in precipitation increased runoff of freshwater, sediment, and land-based pollutants contribute to algal blooms and cause murky water conditions that reduce light.
- Altered ocean currents leads to changes in connectivity and temperature regimes that contribute to lack of food for corals and hampers dispersal of coral larvae.

4. PLASMA THERAPY TO FIGHT COVID-19

1. Why in News?

- The Indian Council of Medical Research —the apex body for medical research in India— has invited institutions to participate in a clinical trial of convalescent plasma therapy.
- The aim is to study the safety and efficacy of said therapy in treating COVID-19 patients.

2. Convalescent Plasma Therapy

- When a person contracts an infection, COVID-19 in this case, their body produces antibodies to attack the virus. These antibodies are secreted by immune cells, called B lymphocytes, found in the plasma. If the infected person can produce sufficient antibodies, he can recover from the disease caused by the virus (or any other pathogen).
- The human blood is primarily made up of four parts – red blood cells; white blood cells; platelets and plasma, which is the liquid part of the blood. Plasma helps the blood clot when needed and supports immunity.
- Convalescent plasma refers to the liquid part of the blood from recovered COVID-19 patients.
- The idea behind convalescent plasma therapy is that such immunity can be transferred from a healthy person to a sick using blood plasma.
- In plasma therapy, the plasma of a person, who has recovered from COVID-19, and thus has sufficient antibodies to fight the disease, is drawn and transferred to people who have freshly contracted the disease.



3. Modus Operandi

- Blood is drawn from a person who has recovered from COVID-19 sickness. The serum is separated and screened for virus-neutralizing antibodies. The serum, which is rich in antibodies, is then administered to a COVID-19 patient showing severe symptoms.
- The process for donating plasma is similar to donating blood and takes about an hour.
- Plasma donors are hooked up to a small device that removes plasma while simultaneously returning red blood cells to their bodies. Unlike regular blood donation in which donors have to wait for red blood cells to replenish between donations, plasma can be donated more frequently, as often as twice a week.
- This therapy is not simple to harness, primarily due to the difficulty of obtaining significant amounts of plasma from survivors.
- In diseases like COVID-19, where most of the patients with severe symptoms are aged, and often suffer from other medical conditions such as hypertension, diabetes, and so on, the effectiveness remains questionable.

4. Effectiveness

- Earlier, a study in China found the therapy effective, albeit on small sample size, in treating coronavirus patients. In this trial, a 200 ml dose of convalescent plasma was administered to 10 adult COVID-19 patients with severe symptoms. The patients witnessed significant improvement with the disappearance of the virus reported among seven patients without any severe adverse side-effects.
- Through this therapy, the sick acquires only temporary passive immunization. It lasts only till the time the injected antibodies remain in the bloodstream—usually less than a week.
- Based on prior experience with respiratory viruses and on data that have emerged from China, the therapy has the potential to lessen the severity or shorten the length of illness caused by COVID-19.
- The Indian Council of Medical Research (ICMR) has given the nod to Kerala to conduct plasma therapy. Kerala is the first state in the country to have been given the nod to try this out, as a task force was already in place. So far, ICMR does not recommend it as a treatment option outside of clinical trials.
- Globally, nearly five lakh positive cases have recovered completely. Therefore, a sufficient supply of antibodies could be available to critically ill patients if the therapy is proven effective.

5. GLOBAL INITIATIVE ON SHARING OF INFLUENZA DATA

1. Why in News?

- India has shared nine whole genome sequences of the novel coronavirus (SARS-CoV-2) with the Global Initiative on Sharing All Influenza Data (GISAID)— a public platform started by the World Health Organisation (WHO) in 2008 for countries to share genome sequences.



2. About GISAID

- The GISAID Initiative involves public-private-partnerships between the Initiative's administrative arm Freunde of GISAID e.V., a registered non-profit association, and governments of the Federal Republic of Germany, the official host of the GISAID platform, Singapore and the United States of America, with support from private and corporate philanthropy.
- It provides public access to the most complete collection of genetic sequence data of influenza viruses and related clinical and epidemiological data through its database (named EpiFlu).
- The GISAID Initiative promotes the international sharing of all influenza virus sequences, to help researchers understand how the viruses evolve, spread and potentially become pandemics.
- The database is hosted by the German government.
- In 2020, GISAID entered into the global research effort to understand the virus causing COVID-19 disease, making available over 2,600 genomic sequences that are modeled in real time, helping to detect viral mutations and track movement of the virus across the planet.

3. Virus Sequencing

- All organisms mutate over time, but so-called RNA viruses such as SARS-CoV-2 introduce errors in each cycle of their replication.
- This is the reason why influenza viruses are so different from season to season and require new vaccines.
- While the new coronavirus doesn't seem to mutate as fast as the flu, there are enough changes for scientists to trace back its ancestry, much like a person's DNA can be traced back to their parents and grandparents.
- By the specific changes that had occurred in his virus, we could tell basically, with a high degree of probability the geographical source of the virus.
- As scientists suspect, the virus is seasonal and returns in a smaller second wave, they can immediately sequence its genome from infected patients, then take samples from the neighborhood where they live to determine if there is a community outbreak.
- This in turn can help more targeted social interventions.
- Beyond determining transmission pathways, there could be clinical implications in continuing to gather more data. For example, scientists will eventually seek to learn whether some strains lead to less or more serious forms of the disease than others, and this could inform targeted treatments.

5. About WHO

- World Health Organization (WHO) is a specialized agency of the United Nations responsible for international public health. It was founded in 1948 and based in Geneva, Switzerland.
- The WHO's broad mandate includes advocating for universal healthcare, monitoring public health risks, coordinating responses to health emergencies, and promoting human health and well being.
- It has 194 member states, and aims to "promote health, keep the world safe and serve the vulnerable".
- It is involved in vaccination campaigns, health emergencies and supporting countries in primary care.
- It is funded by a combination of members' fees based on wealth and population and voluntary contributions.

4. Virus Sequencing Sharing

- From India the 9 sequences have been shared by the Pune-based National Institute of Virology.
- Sequencing the genome of SARS-CoV-2 will help understand where the virus came from, if there are different strains circulating in India, and how the virus has spread.
- The Indian Council of Medical Research (ICMR) allowed all national research laboratories including those under the Council of Scientific and Industrial Research (CSIR) to conduct testing for the novel coronavirus. Since the CSIR labs will now have access to virus samples, they will be in a position to sequence the genome too.
- Hyderabad-based Centre for Cellular and Molecular Biology (CSIR-CCMB) and the Institute of Genomics and Integrative Biology (CSIR-IGIB), Delhi have already started sequencing the virus.
- So far, 3,086 sequences of the virus isolated from humans have been shared by 57 countries. With 621, the U.S. has shared the most number of sequences, followed by the U.K. (350), Belgium (253) and China (242).

6. SHUKRAYAAN-I MISSION OF ISRO

1. Why in News?

- India is planning to conduct an orbiter mission to planet Venus by 2023. The mission to be conducted by India's premier space agency Indian Space Research Organisation (ISRO).



2. About Shukrayaan – I

- A proposed orbiter to Venus by the Indian Space Research Organisation (ISRO) to study the surface and atmosphere of Venus and also its interaction with Sun.
- Mission Shukrayaan-1 is scheduled to the hot planet in 2023.
- Funds were released in 2017 to complete preliminary studies, and solicitations for instruments have been announced.
- ISRO had invited proposals from the international scientific community to carry out novel experiments on its planned Venus mission in 2018.
- The three broad research areas of interest for this mission include surface/subsurface features and re-surfacing processes; second: study the atmospheric chemistry, dynamics and compositional variations, and third: study the atmospheric interaction with solar radiation and solar wind.

3. Why Venus?

- Venus is very similar to Earth in terms of its size, density, mass, gravity and bulk composition and is often called Earth's "twin sister".
- While the surface of Venus is one of the hottest places in the solar system, its atmosphere above the gaseous clouds is a totally different world.
- Venus the only other planet in our Solar System apart from the Earth with active volcanoes.
- Venus is entirely unsuitable for human life today, but some scientists think that Venus was once habitable like the Earth and that the planet's climate took a turn for the worst at some point in its history.

5. International Projects For Venus

- **MESSENGER (NASA, 2004):** Flybys on 24 October 2006 and 5 June 2007 en route to Mercury; observed Venus during closest pass.
- **Venus Express (ESA, 2005):** Equipped with seven scientific instruments, the main objective of the mission was the long term observation of the Venusian atmosphere.
- **Akatsuki (JAXA, 2010):** Also known as the Venus Climate Orbiter (VCO) and Planet-C, is a Japanese (JAXA) space probe. By using five different cameras working at several wavelengths, Akatsuki is studying the stratification of the atmosphere, atmospheric dynamics, and cloud physics.
- **IKAROS (JAXA, 2010):** IKAROS (Interplanetary Kite-craft Accelerated by Radiation Of the Sun) is a Japan Aerospace Exploration Agency (JAXA) experimental spacecraft. IKAROS is the first spacecraft to successfully demonstrate solar sail technology in interplanetary space.

4. India's Upcoming Big Projects

- **Chandrayaan 3:** ISRO has planned another soft-landing attempt on lunar surface with Chandrayaan 3 in November 2020
- **Gaganyaan:** ISRO is moving ahead with its first indigenous manned-space mission called Gaganyaan. Gaganyaan will remain in space for seven days with three Indian astronauts who will be called "Gaganautes" for this mission. Gaganyaan is scheduled for lift-off in 2022.
- **Mangalyaan 2:** Mars Orbiter Mission 2 or MOM-2, also known as Mangalyaan, will be India's second inter-planetary mission to the Red Planet. It is expected to be launched in a suitable window in the near future.
- **India's own Space Station:** By 2030, ISRO is planning to have its own space station like the International Space Station (ISS) currently orbiting around the Earth.
- **NISAR:** India's ISRO and America's NASA joint project will be called NISAR (Nasa-ISRO Synthetic Aperture Radar). NISAR will study hazards and global environmental changes. NISAR is being developed to observe and measure some of the Earth's most mind-boggling processes like ice-sheet collapse, ecosystem disturbances and natural hazards such as tsunamis, earthquakes, landslides and volcanoes.
- **Aditya-L1:** This is India's mission to the Sun. It is the First Indian based Solar Coronagraph to study Solar Corona in visible & near IR bands.
- **EXOSat Planetary Exploration:** It will study neutron stars, supernova remnants, pulsars and regions around black hole.

7. THE GREAT DEPRESSION 1929 AND COVID - 19 IMPACT

1. Why in News?

- World is witnessing global crisis of pandemic COVID-19 which reminds of the Great Depression 1929.



2. Introduction

- The analysis by the UN Department of Economic and Social Affairs (DESA) said the COVID-19 pandemic is disrupting global supply chains and international trade.
- The wide range of possibilities for the predicted decline is explained by the unprecedented nature of this health crisis and the uncertainty around its precise economic impact.
- Estimates of the expected recovery in 2021 are equally uncertain, with outcomes depending largely on the duration of the outbreak and the effectiveness of the policy responses.
- The market crash of 1929 and the 2020 economic crisis caused by the coronavirus epidemic are being compared quite frequently nowadays.
- Looking at the damage it has caused so far and will likely cause in the economy, both similarities and differences can be seen between the two.

3. Similarities between Great Depression & COVID-19 Crisis

- The 1929 economic crisis was triggered by stock market speculation, while the reason underlying the current crisis is the fact that we are face to face with a freeze in the economy due to the coronavirus epidemic.
- There was a situation in both the 1929 and 2020 coronavirus crises that had an adverse effect on workers.
- The two crises are not only economic, but they rather stand out as a social and, in fact, as a political matter.
- In the event that the coronavirus epidemic is prolonged, it appears the unemployment issue will be the most serious matter in the social and political domain.
- A shrink in demand was and is in question for both the Great Depression of 1929 and the 2020 coronavirus crisis, in addition to the interest rate cuts made by central banks to boost economic activities and reactivate the business world, fiscal policies that encourage recruitment are also striking.
- Though the impact of the 1929 economic crisis and the 2020 coronavirus crisis were initially observed in developed countries, the effect of both crises have reached a global scale.

6. CONCLUSION

- Many countries are currently taking measures to avoid adverse impacts on their economies following the coronavirus epidemic.
- Central Banks are struggling to provide the resources demanded by the market with the interest cuts and the asset purchases. Meanwhile, with conveniences such as credit opportunities provided by banks, loan deferrals and the government's tax deferrals, measures are being taken to avoid the likely shrink in the economy.
- The immediate goal is to bring the pandemic under control and mitigate the economic damage to people, companies and countries a rapid, vigorous rebound is possible.
- Decisions that are taken now will determine the future shape of the recovery and global growth prospects thus foundations need to be laid for a strong, sustained and socially inclusive recovery.

4. Differences between Great Depression and COVID-19 Crisis

- The 1929 economic crisis had started with stock market speculations, yet the cause of the current crisis is the coronavirus epidemic, which has brought economies to a standstill.
- In the 1929 crisis, the world had united and formed institutions such as the International Monetary Fund (IMF) and World Bank to deal with global finance problems post-crisis.
- However, in the coronavirus economic crisis of 2020, countries have individual decision-making processes. While the epidemic is global, the measures taken to fight the virus and the economic problems it has caused are on a domestic scale.
- While it was the shrinking demand that stood out in the 1929 crisis, the shrinking demand as well as the drop in demand for fuel, oil prices plummeting worldwide, and the global energy wars that have heated up after the shock appear as the serious consequences of this epidemic.

5. Facts and Figures during the Great Depression and COVID-19 Crisis

- By 1933, when the Great Depression reached its lowest point, some 15 million Americans (20% of the population) were unemployed and nearly half the country's banks had failed. Jobless claims surged in April 2020 to 281,000 – a jump of 70,000 from the week before.
- By 1931, industrial production had dropped by half, prompting President Herbert Hoover's administration to offer failing banks and other institutions government loans, allowing them to extend loans to businesses, which would hang on to staff. It was widely considered a flop.
- Economists estimate about 14 million jobs in the leisure and hospitality sector alone are at risk due to mandated shutdowns.
- The year 2020 could see the worst global economic fallout with over 170 countries likely to experience negative per capita income growth due to the raging coronavirus pandemic.
- According to the IMF, India is among the only two major economies, which will register a positive growth rate in 2020. The other being China, for which the IMF has projected a growth rate of 1.2 per cent.

SEVEN MCQ's WITH EXPLANATORY ANSWERS

(Based on Brain Boosters)

1. 'Bharat Padhe Online' Campaign

Q. Consider the following statements with reference to 'Bharat Padhe Online Campaign':

1. NITI Aayog has launched this campaign for promoting online ecosystem in rural areas.
2. This campaign will also promote available digital education platforms such as 'SHAGUN', 'SWAYAM', etc.

Which of the statements given above is/are correct?

- a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2

Answer: (b)

Explanation: Statement 1 is incorrect. Union Ministry for Human Resource Development (HRD) has recently launched a week long 'Bharat Padhe Online' campaign for crowd sourcing of Ideas for improving online education ecosystem of India.

Statement 2 is correct. The campaign aimed to invite all the best brains in India to share suggestions/solutions directly with HRD Ministry to overcome constraints of online education while promoting the available digital education platforms.

2. Cytokine Storms

Q. With reference to the 'Cytokine Storms', consider the following statements:

1. Cytokines are signalling proteins that are released by cells and play important role in normal immune responses.
2. Cytokine storm is characterised by the overproduction of immune cells and cytokine themselves.

Which of the statements given above is/are correct?

- a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2

Answer: (c)

Explanation: Both statements are correct. Cytokines are signalling proteins that are released by cells and play important role in normal immune responses.

Cytokine storm is characterised by the overproduction of immune cells and cytokine themselves because of a dysregulation in the process. A cytokine storm can occur as a result of an infection, autoimmune condition, or other disease. It may also occur after treatment with some types of immunotherapy.

3. Third Mass Bleaching of Great Barrier Reefs

Q. Consider the following statements with reference to the mass bleaching of Great Barrier Reefs:

1. Tropical coral reefs bleach more often when the Pacific Ocean is in a phase known as El Niño.
2. When a coral bleaches, it will reduce their reproductive output in a bleaching year and the year after.
3. Altered ocean currents are also one of the factors that contribute to lack of food for corals and hampers dispersal of coral larvae.

Which of the statements given above is/are correct?

- a) 1 and 2 only b) 2 only
c) 2 and 3 only d) 1, 2 and 3

Answer: (d)

Explanation: All statements are correct. Historically, tropical coral reefs bleach more often when the Pacific Ocean is in a phase known as El Niño. This latest bleaching on the reef has hit during a neutral phase in the cycle.

When a coral bleaches, it is not dead. Corals can survive a bleaching event, but they are under more stress and are subject to mortality. Bleached corals are injured and starving and they are more susceptible to disease. They will also reduce their reproductive output in a bleaching year and the year after.

Altered ocean currents: leads to changes in connectivity and temperature regimes that contribute to lack of food for corals and hampers dispersal of coral larvae.

4. Plasma Therapy

Q. With reference to the convalescent plasma therapy, consider the following statements:

1. The idea behind convalescent plasma therapy is that immunity can be transferred from a healthy person to a sick using blood plasma.
2. Plasma helps the blood clot when needed and supports immunity.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

Answer: (c)

Explanation: Both statements are correct. When attacked by a pathogen, our immune systems produce proteins called antibodies to fight the infection. If the infected person can produce sufficient antibodies, he can recover from the disease caused by that pathogen.

The idea behind convalescent plasma therapy is that such immunity can be transferred from a healthy person to a sick using blood plasma. Plasma helps the blood clot when needed and supports immunity.

In this therapy, blood from recovered patients, which is rich with antibodies, used to treat other sick people.

5. Global Initiative on Sharing of Influenza Data

Q. Consider the following statements with reference to the 'Global Initiative on Sharing of Influenza Data' (GISAID):

1. GISAID was started by United Nations and World Health Organisation to share genome sequences.
2. The database of GISAID is hosted by the United Nations.
3. In a fight against COVID-19, India has shared nine whole genome sequences of the novel coronavirus (SARS-CoV-2) with the GISAID.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 only
- c) 2 and 3 only
- d) 3 only

Answer: (d)

Explanation: Statement 1 and 2 are incorrect. The GISAID Initiative, originally known as a Global Initiative on Sharing All Influenza Data, involves public-private-partnerships between the Initiative's administrative arm Freunde of GISAID e.V., a registered non-profit association, and governments of the Federal Republic of Germany, the official host of the GISAID platform, Singapore and the United States of America, with support from private and corporate philanthropy. The database is hosted by the German government.

Statement 3 is correct. In a fight against COVID-19, India has shared nine whole genome sequences of the novel coronavirus (SARS-CoV-2) with the GISAID. All the sequences have been shared by the Pune-based National Institute of Virology.

6. Shukrayaan I Mission

Q. With reference to the 'Shukrayaan I Mission', consider the following statements:

1. It is joint mission of Indian Space Research Organisation (ISRO) and NASA.
2. The aim of the mission is to study the surface and atmosphere of Venus and also its interaction with Sun.
3. It is scheduled to launch in 2023.

Which of the statements given above is/are correct?

- a) 1 and 2 only
- b) 2 and 3 only
- c) 2 only
- d) 1, 2 and 3

Answer: (b)

Explanation: Statement 1 is incorrect. Shukrayaan-1 is a proposed orbiter to Venus by the Indian Space Research Organisation (ISRO) to study the surface and atmosphere of Venus.

Statement 2 and 3 are correct. The aim of the mission is to study the surface and atmosphere of Venus and also its interaction with Sun. It is scheduled to launch in 2023.

7. The Great Depression 1929 and COVID-19 Impact

Q. Consider the following statements:

1. The Great Depression was the worst worldwide economic downturn that lasted for 10 years from 1929.
2. The year 2020 could see the worst global economic fallout with over 170 countries likely

to experience negative per capita income growth due to the raging coronavirus pandemic.

3. According to the IMF, India is among the only two major economies, which will register a positive growth rate in 2020.

Which of the statements given above is/are correct?

- a) 1 only b) 2 and 3 only
c) 3 only d) 1, 2 and 3

Answer: (d)

Explanation: All statements are correct. The Great

Depression was the worst worldwide economic downturn that lasted for 10 years from 1929.

The year 2020 could see the worst global economic fallout with over 170 countries likely to experience negative per capita income growth due to the raging coronavirus pandemic.

According to the IMF, India is among the only two major economies, which will register a positive growth rate in 2020. The other being China, for which the IMF has projected a growth rate of 1.2 per cent.



SEVEN IMPORTANT NEWS

1. Groundwater Uranium Contamination in Bihar

A new study conducted by the University of Manchester, UK and Mahavir Cancer Institute and Research Centre, Phulwari sharif in Patna has found uranium contaminating the groundwater in 10 districts of Bihar. The 10 districts are Supaul, Gopalganj, Siwan, Saran, Patna, Nalanda, Nawada, Aurangabad, Gaya and Jehanabad.

Key Highlights

Uranium concentrations are elevated mostly in the North West-South East band along and to the east of Gandak river and running south of the Ganga river towards Jharkhand, particularly in Gopalganj Siwan, Saran, Patna, Nalanda and Nawada districts.

The maximum uranium content was in Supaul, 80 microgram of

uranium per litre of water. The permissible limit according to the World Health Organization (WHO) is 30 microgram per litre. It was also below the permissible limit in Patna.

This is the first time that uranium content has been detected in groundwater. Arsenic was first reported in 2003 in Bihar's Bhojpur district. West Bengal has the maximum estimated population of those at risk for arsenic contamination (26 million), followed by Bihar (9 million), Uttar Pradesh (3 million), Assam (1.2 million), Manipur (1 million) and Jharkhand (0.4 million).

Impact

Exposure to uranium may lead to numerous adverse health impacts including bone toxicity and impaired

renal function. As per information received from Department of Atomic Energy, elevated uranium level in drinking water may affect human health.

Health studies carried out elsewhere in the world suggest that elevated uranium level in drinking water may be associated with kidney toxicity.

Further, several studies focusing on health effects have been carried out in Finland among people who use their drilled wells as sources of drinking water having uranium concentrations in the range 5.6 – 3410 ppb. However, no clear clinical symptoms have been observed among the exposed population. ■

2. SAFE PLUS Scheme

The Small Industries Development Bank of India (SIDBI) has said that it will provide emergency working capital of up to one crore rupees to small and medium enterprises (MSMEs) against their confirmed government orders. The SIDBI Assistance to Facilitate Emergency response against Corona virus (SAFE) PLUS will be offered collateral free and disbursed within 48 hours.

Key Highlights

The scheme was launched to provide financial assistance to MSMEs engaged in manufacturing of hand sanitizers, masks, gloves, head gear, bodysuits, shoe-covers, ventilators and goggles used in dealing with COVID-19.

The loans will be offered at an interest rate of five per cent. Meanwhile, the bank further informed that the limit of SAFE loans, announced

a few days back has been enhanced from 50 lakh rupees to two crore rupees.

SIDBI has also opened an additional financial window for the healthcare sector under its flagship scheme called SIDBI Make in India Soft Loan Fund for Micro Small and Medium Enterprises (Smile).

In another major initiative, the limit of SAFE (SIDBI Assistance to Facilitate Emergency response against

coronavirus) loans which was launched few days back, has been enhanced from Rs.50 lakh to Rs.2 crore for executing government orders by those MSMEs which are eligible under the respective State Government's special

policy package for interest subsidy/subvention or capital subsidy.

About SIDBI

SIDBI was set up in 1990 under an Act of Indian Parliament, to act as the

principal financial institution for MSME sector as well as for coordination of functions of institutions engaged in similar activities.

3. Cluster Transmissions

As India registers a surge in cases of COVID-19, the government has implemented a cluster containment strategy to stop spread of coronavirus in India.

What is Cluster Transmission?

The World Health Organization (WHO) does not have a specific definition for cluster transmissions. Though it has used this term to denote the size of infections, in official parlance it has used other terms such as imported cases, local transmission and community transmission. Cluster transmission has been used by Indian authorities to identify infections that are largely concentrated in a limited locality, often within a family and its extended circle.

A scientist from the Indian Council of Medical Research explained, "If one

man from a family has travelled abroad and he transmits the infection to other family members or his extended family, it can be characterised as a cluster of infections. In such cases, the source of the infection is known and can be traced back even if someone outside the family has tested positive."

About Strategy

The cluster containment strategy would focus on strict implementation of the complete lockdown of a particular area, social distancing measures, enhanced active surveillance of people residing in that area, testing of all suspected cases, isolation of cases and quarantine of contacts.

The state governments follow micro-plans to contain the spread of the virus to a larger group of people. This plan comprises identifying a

containment zone which has to be decided on the basis of contacts that have been traced of the people who tested positive and the extent of the contacts. If the contact tracing is taking more than a day's time, an area of 3km radius around the residence of the positive cases has to be demarcated. Additionally, a buffer zone of 5km radius and 7km in the case of rural areas is identified for cluster containment plan.

In an ideal situation, the ASHA health workers and auxiliary nurse midwife health workers have to visit houses in the containment zone and they have to search for clinically suspect cases, contacts have to be identified and general awareness has to be spread on prevention of the infection, home quarantine and common symptoms.

4. Round-tripping

In a major relief for New Delhi Television Limited (NDTV), the Supreme Court has quashed an income tax re-assessment notice issued by revenue authorities against the premier news broadcasting company.

Background

Though the Income Tax department had accused NDTV of "round-tripping" finances in connection with a July 2007 issuance of step-up coupon bonds amounting to \$100 million through its U.K. subsidiary, the Supreme Court stood firm to hold that the revenue

authorities failed to show that the channel did not make a "full and true" disclosure of its income for the assessment year 2008-09.

What is Round-tripping?

The term 'round-tripping' denotes a trip where a person or thing returns to the place from where the journey began. In the context of black money, it leaves the country through various channels such as inflated invoices, payments to shell companies overseas, the hawala route and so on. After cooling its heels overseas for a

while, this money returns in a freshly laundered form; thus completing a round-trip.

It could be invested in offshore funds that in turn invest in Indian assets. The Global Depository Receipts (GDR) and Participatory Notes (P-Notes) are some of the other routes that have been used in the past.

There are a number of observed factors that promotes round tripping. Mainly, Tax concessions allowed in the foreign country encourages individuals to park money there and then reroute it.

5. GRACE Follow-On Mission

According to the data from the Grace Follow-On (FO) Mission, Greenland shed an extraordinary 600 billion tonnes of ice by the end of summer last year. This melt-driven loss would have raised global sea levels by 2.2mm.

Between 2002 and 2019, Greenland lost 4,550 billion tons of ice, an average of 268 billion tons annually -- less than half what was shed last summer. To put that in perspective, Los Angeles County residents consume 1 billion tons of water per year.

About GRACE FO Mission

GRACE-FO mission is a partnership between NASA and the German

Research Centre for Geosciences (GFZ). GRACE-FO is a successor to the original GRACE mission, which orbited Earth from 2002-2017.

GRACE-FO, which launched May 22, 2018, will continue the work of tracking Earth's water movement to monitor changes in underground water storage, the amount of water in large lakes and rivers, soil moisture, ice sheets and glaciers, and sea level caused by the addition of water to the ocean. These discoveries provide a unique view of Earth's climate and have far-reaching benefits to society and the world's population.

GRACE-FO's raw data will be a series of measurements showing how far apart two satellites are from each other. The twin satellites follow each other in orbit around the Earth, separated by about 137 miles (220 km). They will constantly send microwave signals to each other to measure the distance between them.

The spacecraft have proven to be particularly effective at monitoring the planet's water reserves, including polar ice, global sea levels and groundwater.

6. US Approved Sale of Missile and Torpedoes

Recently, the US Department of State approved a possible foreign military sale to India of 16 MK 54 all round up lightweight torpedoes and related equipment at an estimated cost of \$63 million. In addition, in another deal, the US approved the possible sale to India of ten AGM-84L Harpoon Block II air-launched missiles and related equipment at an estimated cost of \$92 million.

About MK 54 Lightweight Torpedo

Previously, the MK 54 lightweight torpedo was known as the Lightweight Hybrid Torpedo (LHT). It weighs around 608 pounds, while its warhead weighs around 96.8 pounds and is highly explosive. These torpedoes are used by US surface ships, fixed-wing aircraft and helicopters and are their primary anti-submarine warfare weapon. According to the US Director Operational Test and Evaluation, the primary use of this equipment is for offensive purposes



when deployed by anti-submarine warfare aircraft and helicopters, and for defensive purposes when deployed by ships and against fast, deep-diving nuclear submarines and slow-moving, quiet, diesel-electric submarines.

About AGM-84L Harpoon Block II Air-launched Missiles

The Harpoon missile system will be integrated into the P-8I aircraft to conduct anti-surface warfare missions in defense of critical sea lanes while enhancing interoperability with the

United States and other allied forces. India will use the enhanced capability as a deterrent to regional threats and to strengthen its homeland defense.

Further, the Harpoon missile uses GPS-aided inertial navigation to hit the designated target. Its warhead weighs over 500 pounds and is capable of delivering lethal firepower against targets, including land-based targets, coastal defence sites, surface-to-air missile sites, exposed aircraft and industrial or port facilities.

7. OPEC and Russia Agree to Cut Oil Production

The Organization of the Petroleum Exporting Countries (OPEC), Russia and other countries reached a tentative agreement to temporarily cut production.

According to the OPEC, the initial 10 million barrels per day cut would last in May and June, before tapering to 8 million barrels per day for the rest of the year. Beginning in January 2021, the cuts would decrease to 6 million barrels per day, which would continue through April 2022.

The agreement was not contingent on nations outside of OPEC+ curbing production, which some had suggested might be a stipulation for Saudi Arabia and Russia to scale back production. The group did, however, call on other major producers to cut production in a further bid to prop up prices.

Background

Global fuel demand has plunged by as much as 30 million bpd, 30% of global supplies, as measures to fight the coronavirus have grounded aircraft, reduced vehicle usage and curbed economic activity. So even a 20 million bpd cut falls short.

About OPEC

The Organization of the Petroleum Exporting Countries (OPEC) was founded in Baghdad, Iraq, with the signing of an agreement in September 1960 by five countries namely Islamic Republic of Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. They were to become the Founder Members of the Organization.

These countries were later joined by Qatar (1961), Indonesia (1962),

Libya (1962), the United Arab Emirates (1967), Algeria (1969), Nigeria (1971), Ecuador (1973), Gabon (1975), Angola (2007), Equatorial Guinea (2017) and Congo (2018).

Ecuador suspended its membership in December 1992, rejoined OPEC in October 2007, but decided to withdraw its membership of OPEC effective 1 January 2020. Indonesia suspended its membership in January 2009, reactivated it again in January 2016, but decided to suspend its membership once more at the 171st Meeting of the OPEC Conference on 30 November 2016. Gabon terminated its membership in January 1995. However, it rejoined the Organization in July 2016. Qatar terminated its membership on 1 January 2019. This means that, currently, the Organization has a total of 13 Member Countries. ■

SEVEN PRACTICE QUESTIONS FOR MAINS EXAM

1. The United States of America (USA) has suspended funding of the World Health Organisation (WHO), accusing it of "severe" mismanagement of COVID-19. Critically evaluate the impact of the move.
2. How can the mountain ecosystem be restored from the negative impact of development initiatives and tourism? Discuss.
3. The COVID-19 pandemic has exposed the limits of capitalism. The time has come to explore alternative social structures and economic systems. Do you agree? Give reasons.
4. "Excess stocks of the Food Corporation of India must be released to the poor during the coronavirus crisis." Discuss.
5. How far is Zero Budget Farming helpful in sustaining agricultural production? Elaborate.
6. What does 'Cluster Transmission' mean? What measures do Central and state governments adopt to contain cluster transmissions?
7. Elaborate the policy taken by the Government of India to meet the challenges of the food processing sector.



SEVEN IMPORTANT FACTS FOR PRELIMS

1. Which state will be the first to start 'Pool Testing of COVID-19' samples?
- Uttar Pradesh
2. Which state government has launched 'Operation Shield' to combat COVID-19?
- Delhi
3. Which state has banned the 'Meru Jatra' festival and congregations related to it at temples on the occasion of Mahavishub Sankranti?
- Odisha
4. Which ministry has launched 'YUKTI Portal' to monitor and record the efforts and initiatives which have been taken by in the wake of coronavirus outbreak?
- Ministry of Human Resource Development
5. What is the theme of 'World Homoeopathy Day 2020'?
- "Enhancing the scope of Homoeopathy in Public Health"
6. Who has developed COVID-19 Sample Collection Kiosk (COVSACK)?
- Defence Research and Development Organisation (DRDO)
7. Which country will host 2020 edition of Asian Boxing Championships?
- India



SEVEN IMPORTANT QUOTES

(IMPORTANT FOR ESSAY AND ANSWER WRITING)

1. Be more dedicated to making solid achievements than in running after swift but synthetic happiness.

- A. P. J. Abdul Kalam

2. Truth can be stated in a thousand different ways, yet each one can be true.

- Swami Vivekananda

3. Cultivation of mind should be the ultimate aim of human existence.

- B. R. Ambedkar

4. We can live without religion and meditation, but we cannot survive without human affection.

- Dalai Lama

5. Facts are many, but the truth is one.

- Rabindranath Tagore

6. It's far more important to know what person the disease has than what disease the person has.

- Hippocrates

7. The very essence of instinct is that it's followed independently of reason.

- Charles Darwin



AN INTRODUCTION

Dhyeya IAS, a decade old institution, was founded by Mr. Vinay Singh and Mr. Q.H. Khan. Ever since its emergence it has unparalleled track record of success. Today, it stands tall among the reputed institutes providing coaching for Civil Services Examination (CSE). The institute has been very successful in making potential realize their dreams which is evident from success stories of the previous years.

Quite a large number of students desirous of building a career for themselves are absolutely less equipped for the fairly tough competitive tests they have to appear in. Several others, who have a brilliant academic career, do not know that competitive exams are vastly different from academic examination and call for a systematic and scientifically planned guidance by a team of experts. Here one single move invariably put one ahead of many others who lag behind. Dhyeya IAS is manned with qualified & experienced faculties besides especially designed study material that helps the students in achieving the desired goal.

Civil Services Exam requires knowledge base of specified subjects. These subjects though taught in schools and colleges are not necessarily oriented towards the exam approach. Coaching classes at Dhyeya IAS are different from classes conducted in schools and colleges with respect to their orientation. Classes are targeted towards the particular exam. Classroom guidance at Dhyeya IAS is about improving the individual's capacity to focus, learn and innovate as we are comfortably aware of the fact that you can't teach a person anything you can only help him find it within himself.

DSDL Prepare yourself from distance

Distance learning Programme, DSDL, primarily caters the need for those who are unable to come to metros for economic or family reason but have ardent desire to become a civil servant. Simultaneously, it also suits to the need of working professionals, who are unable to join regular classes due to increase in work load or places of their posting. The principal characteristic of our distance learning is that the student does not need to be present in a classroom in order to participate in the instruction. It aims to create and provide access to learning when the source of information and the learners are separated by time and distance. Realizing the difficulties faced by aspirants of distant areas, especially working candidates, in making use of the Institute's classroom guidance programme, distance learning system is being provided in General Studies. The distance learning material is comprehensive, concise and exam-oriented in nature. Its aim is to make available almost all the relevant material on a subject at one place. Materials on all topics of General Studies have been prepared in such a way that, not even a single point will be missing. In other words, you will get all points, which are otherwise to be taken from 6-10 books available in the market / library. That means, DSDL study material is undoubtedly the most comprehensive and that will definitely give you added advantage in your Preliminary as well as Main Examination. These materials are not available in any book store or library. These materials have been prepared exclusively for the use of our students. We believe in our quality and commitment towards making these notes indispensable for any student preparing for Civil Services Examination. We adhere all pillars of Distance education.

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