

GOVERNANCE**Mission COVID Suraksha**

The Government of India has announced the stimulus package of Rs. 900 crore for the Mission COVID Suraksha, the Indian Covid-19 Vaccine Development Mission, which will help the development process of the vaccine candidates.

Key Points**About:**

- Mission COVID Suraksha is India's targeted effort to enable the development of indigenous, affordable and accessible vaccines for the country and will complement the ongoing mission of Atmanirbhar Bharat.
- The Centre had announced this package during the third economic stimulus.
- The Mission with its end-to-end focus from preclinical development through clinical development and manufacturing and regulatory facilitation for deployment, would consolidate all available and funded resources towards accelerated product development.

Grant:

- Phase-I of the Mission has been allotted Rs. 900 Crore for a period of 12 months.
- The grant will be provided to the Department of Biotechnology (DBT) for Research and Development (R&D) of Indian Covid-19 vaccines.
- Stakeholders:
- It will be led by DBT and implemented by a dedicated Mission Implementation Unit at the Biotechnology Industry Research Assistance Council (BIRAC).
- The existing activities under National Bio Pharma Mission (NBM) and Ind-CEPI Mission will provide complementary strengths to this Mission.
- The DBT is supporting the implementation of the Ind-CEPI Mission, "Epidemic preparedness through rapid vaccine development: Support of Indian vaccine development aligned with the global initiative of the Coalition for Epidemic Preparedness Innovations (CEPI)".
- The Ind-CEPI Mission was approved in March 2019.

Objectives:

- Accelerating pre-clinical and clinical development.
- Licensure of Covid-19 vaccine candidates that are currently in clinical stages or ready to enter the clinical stage of development.
- Establishing clinical trial sites.
- Strengthening the existing central laboratories and suitable facilities for animal studies, production facilities and other testing facilities to support the vaccine development.
- Supporting the development of common harmonized protocols, training, data management systems, regulatory submissions, internal and external quality management systems and accreditations.
- Supporting capabilities for process development, cell line development and manufacturing of GMP batches for animal toxicology studies and clinical trials.
- Developing suitable Target Product Profile so that vaccines being introduced through the mission have preferred characteristics applicable to India.

Vaccine Candidates:

- A total of 10 vaccine candidates have been supported by DBT so far at both academia and industry and as on date 5 vaccine candidates are in human trials.
- Covishield: The Serum Institute of India (SII) is conducting the phase-3 trial of the Oxford-Astrazeneca Covid-19 vaccine.
- Covaxin: The indigenously developed Bharat Biotech and the Indian Council of Medical Research (ICMR) vaccine has already started the phase III clinical trial.
- ZyCoV-D: Indigenously developed vaccine by Zydus Cadila has completed the phase-2 clinical trial in the country.
- Sputnik V: The combined phase 2 and 3 clinical trials of the Russian Covid-19 vaccine Sputnik V in India are about to get started.
- BNT162b2: India is focusing on training for conducting phase II and III human clinical trials of the Pfizer's Covid-19 vaccine candidate along lines of India's regulatory mechanism.

Clinical Trials

- It is a systematic study to generate data for discovering or verifying the clinical and pharmacological profile (including pharmacodynamic and pharmacokinetic) or adverse effects of a new drug on humans.
- It is the only way of establishing the safety and efficacy of any drug before its introduction in the market for human use and is preceded by animal trials where the efficacy and side effects are observed in animals and an estimated drug dose is established.

Clinical trials of drugs developed in India have to undergo all four phases of trials in India.

- Phase I or clinical pharmacology trials or “first in man” study.
- Phase II or exploratory trials.
- Phase III or confirmatory trials.
- Phase IV trials or post-marketing phase.

SOCIAL JUSTICE**Hidden Epidemic**

A new research published recently in Diabetologia (journal of the European Association for the Study of Diabetes) highlights the vulnerability of Indian youth towards diabetes.

Key Points

- The research titled “Lifetime risk of diabetes in metropolitan cities in India,” was done by a team of authors in India, U.K. and U.S., led by Shammi Luhar, Department of Public Health and Primary Care, University of Cambridge, U.K.

Findings of the study:

- More than half of men (55%) and two thirds (65%) of women aged 20 years in India are more likely to develop diabetes, with most of those cases (around 95%) likely to be type 2 diabetes (T2D) in their lifetime.

Type 2 diabetes:

- It affects the way the body uses insulin. While the body still makes insulin, unlike in type I, the cells in the body do not respond to it as effectively as they once did.
- The population with 45 and above age groups is the most affected with it.
- This is the most common type of diabetes and it has strong links with obesity.
- Lifetime risk of developing diabetes in 20 year old men and women free of diabetes today is 56% and 65%, respectively.
- Obesity has a significant impact on vulnerability to diabetes.
- 86% higher among 20 year old women and 87% among men of metropolitan area.
- India currently has 77 million adults who have diabetes and this number is expected to almost double to 134 million by 2045.
- Women generally had a higher lifetime risk of developing diabetes across their lifespan.
- Remaining lifetime risk of developing diabetes declined with age. As per researchers, those currently aged 60 years and free of diabetes, are less likely to develop diabetes in their remaining life.

Sources of data for the study:

- Sex and BMI-specific incidence rates of diabetes in urban India taken from the Centre for Cardiometabolic Risk Reduction in South Asia (2010–2018);
- age, sex and urban-specific rates of mortality from period lifetables reported by the Government of India (2014);
- Prevalence of diabetes from the Indian Council for Medical Research India Diabetes study (2008–2015).

Impact of high probabilities of developing diabetes:

- Overburdening of already strained health Infrastructure of the country.
- Increase out-of-pocket expenditure on diabetes treatment by patients.

Causes of such high incidences of diabetes:

- Urbanisation
- Decreasing diet quality
- Decreased levels of physical activity

Prevention or postponing diabetes by effective lifestyle modification, such as:

- Following a healthy diet

- Increasing physical activity
- Reducing body weight in those who are obese or overweight

Diabetes

- Diabetes is a Non-Communicable Disease (NCD) that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces.

Types:

- Type I diabetes: It is also known as juvenile diabetes (as it mostly affects children of age 14-16 years), this type occurs when the body fails to produce sufficient insulin. People with type I diabetes are insulin-dependent, which means they must take artificial insulin daily to stay alive.
- Gestational diabetes: This type occurs in women during pregnancy when the body sometimes becomes less sensitive to insulin. Gestational diabetes does not occur in all women and usually resolves after giving birth.
- Diabetes affects the five major organs namely, Kidney, Heart, Blood vessels, Nervous System, and Eyes (retina).
- The factors responsible for the increase in diabetes are an unhealthy diet, lack of physical activity, harmful use of alcohol, overweight/obesity, tobacco use, etc.

INDIAN ECONOMY**Electrification of Railways**

Recently, the Minister of Railways has inaugurated the newly electrified Dhigawara-Bandikui section of North Western Railway and flagged off the first train on this electrified route from Dhigawara station in Alwar District, Rajasthan.

Key Points**History of Railways:**

- 1832: The first railway proposals for India were made in Madras.
- 1837: The country got its first train in the form of Red Hill Railway, which was built with the sole purpose of transporting granite for road building.
- 1853: In April, India's first passenger train, operated by the Great Indian Peninsula Railway ran between Bori Bunder (Mumbai) and Thane.
- 1925: In February, the first electric passenger train ran between Victoria Terminus and Kurla (Mumbai).
- 1951: Indian Railways was nationalised.

Current Electrification:

- Indian Railways has set a target to complete Electrification of its Broad gauge network by December 2023.
- More than 66% of the Broad gauge route has already been electrified.
- With 18065 km of electrification, Railways recorded a 371% increase in electrification during 2014-20 period as compared to 2009-2014.

Benefits of Electrification:

- Speed: 100% electrification will provide seamless train operation by eliminating detention of trains due to change in traction (action of drawing or pulling something over a surface) from diesel to electric and vice versa.
- Capacity: It will help Railways in enhancing line capacity due to higher speed and higher haulage capacity of electric locomotives.
- Safety: Improved signaling system will lead to enhanced safety in train operations.
- Less Financial Burden: Electric traction is much cheaper and efficient compared with diesel traction as running trains on electric traction is 50% cheaper than diesel.
- Seamless Movement: Electric Multiple Units (EMUs) are ideal for suburban services, which require higher acceleration and braking features for frequent starts and stops.
- Employment Generation: Direct employment during the construction phase for electrification will translate to about 20.4 crore man days, which will significantly boost the employment.
- Energy Security: Total shift to electric traction will reduce fossil fuel consumption of about 2.83 billion liters per annum and also give a subsequent reduction in greenhouse gases (GHG) emissions.

- GHG emission for electric traction falls below diesel traction, making it an environmentally friendly option.
- Energy Bill Savings: It provides savings of Rs. 13,510 crore per annum in fuel bill as maintenance of electric locomotive is low as compared to diesel locomotive.
- Regeneration facilities of electric locomotives will save 15-20% energy and also there is a reduced overall requirement of electric locomotives due to their higher horsepower.
- Sustainability: Reduced carbon footprint as environmental cost per tonne Km for electric traction is less as compared to diesel traction.
- In line with the commitment made by India in Conference of Parties (COP) 21 (Paris) total shift to electric traction will reduce Carbon Dioxide (CO₂) emission of Railways by 24% till 2027-28.
- Carbon footprint can be defined as the total amount of GHG produced directly and indirectly to support human activities, usually expressed in equivalent tons of CO₂.

Using More Renewable Energy:

- In July 2020, Indian Railways decided to be self-reliant for its energy needs by utilizing its vacant lands for Renewable Energy (RE) projects.
- It will utilize solar energy for meeting its traction power requirements.

INTERNATIONAL RELATIONS

China's New Dam on Brahmaputra

Recently, Chinese authorities have given the go ahead for a Chinese hydropower company to construct the first downstream hydropower project on the lower reaches of the river Brahmaputra (known as Yarlung Zangbo in Tibet).



Key Points

Brahmaputra:

- It originates under the name of Siang or Dihang, from the Chemayungdung glacier of the Kailash range near the Mansarovar lake. It enters India west of Sadiya town in Arunachal Pradesh.
- Tributaries: Dibang, Lohit, Siang, Burhi Dihing, Tista, and Dhansari.
- It is a perennial river and has several peculiar characteristics due to its geography and prevailing climatic conditions.
- It is flooded twice annually. One flood is caused by the melting of the Himalayan snow in summer and the other due to the monsoon flows.
- The frequency of these floods have increased and are devastating due to climate change and its impact on high and low flows.
- These pose a concern for the population and food security in the lower riparian states of India and Bangladesh.

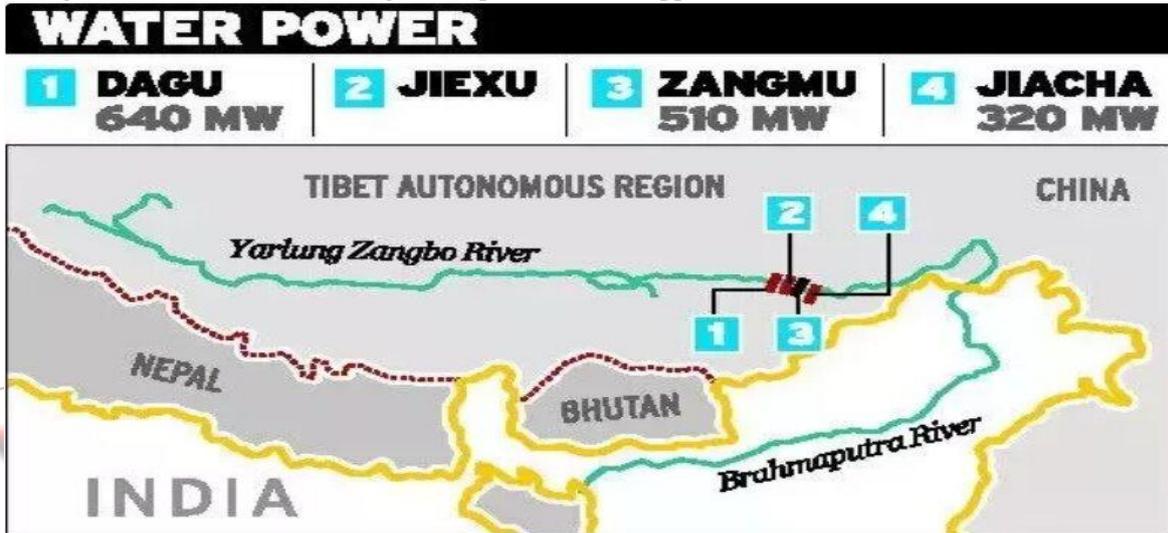
- The river is in itself dynamic as frequent landslides and geological activity force it to change course very often.

About the Project:

- The state-owned hydropower company POWERCHINA signed a strategic cooperation agreement with the Tibet Autonomous Region (TAR) government to implement hydropower exploitation in the downstream of the Yarlung Zangbo river as part of the new Five Year Plan (2021-2025).
- This will be the first time the downstream sections of the river will be tapped. However, the location of the planned project has not been mentioned anywhere.
- The Great Bend of the Brahmaputra and the Yarlung Zangbo Grand Canyon in Medog county, where the river turns sharply to flow across the border into f Arunachal Pradesh could be the potential spot for the project.
- This 50 km section alone offers a potential of developing 70 million kilowatt hours (Kwh).

China’s Previous Projects:

In 2015, China operationalised its first hydropower project at Zangmu in Tibet, while three other dams at Dagu, Jiexu and Jiacha are being developed, all on the upper and middle reaches of the river.



Importance of the Project for China:

- The 60 million kWh hydropower exploitation could provide 300 billion kWh of clean, renewable and zero-carbon electricity annually.
- The project will play a significant role in realising China’s goal of reaching a carbon emissions peak before 2030 and carbon neutrality till 2060.
- Concerns for India:
- India has been expressing concerns on Brahmaputra since 2015 when China operationalised its project at Zangmu.
- A dam at the Great Bend, if approved, would raise fresh concerns considering its location downstream and just across the border from Arunachal Pradesh.
- For India, quantity of water is not an issue because these are run of the river dams and will not impact the Brahmaputra flow. More importantly, Brahmaputra is not entirely dependent on upstream flows and an estimated 35% of its basin is in India.
- However, India is concerned about the Chinese activities affecting the quality of water, ecological balance and the flood management.
- India and China do not have a water sharing agreement. Both nations share hydrological data so it becomes important to share genuine data and have continuous dialogue on issues like warning of droughts, floods and high water discharges.

Way Forward

- India is required to go beyond the exchange of hydrological data and ask China for information on the topographic condition of the whole basin.
- Any forward movement on ensuring hydro-security in the Brahmaputra basin would require a long-term understanding between the two countries. It is necessary for India to engage China

in a sustained dialogue and secure a water-sharing treaty that serves the interests of both the countries.

IMPORTANT FACTS FOR PRELIM**Guru Nanak Jayanti**

The President of India has greeted the citizens on the occasion of Guru Nanak Jayanti.

It is a sacred festival of the Sikh community and is celebrated to commemorate the birth anniversary of Guru Nanak Dev, who is believed to be born on Poornima (full moon) of the Kartika (8th month of Hindu calendar), which falls on 30th of November in 2020.

Key Points**Guru Nanak Dev:**

- Birth: In 1459 at Talwandi Rai Bhoi village near Lahore, which was later renamed as Nankana Sahib.
- He was the first of the 10 gurus of Sikhism.

Contributions:

- Initiated inter-faith dialogue way back in the 16th century and had conversations with most of the religious denominations of his times.
- Wrote compositions which were included in the Adi Granth, compiled by Guru Arjan (1563-1606), the fifth Sikh guru.
- This came to be known as Guru Granth Sahib after the additions made by the 10th Sikh guru Gobind Singh (1666-1708).
- Advocated the 'Nirguna' (devotion to and worship of formless divine) form of bhakti.
- Rejected sacrifices, ritual baths, image worship, austerities.
- Set up rules for congregational worship (Sangat) involving collective recitation.
- Gave the basic mantra of 'Ek Onkar' to his followers and insisted on treating all human beings equally, without discriminating on the basis of caste, creed and gender.
- Death: In 1539 at Kartarpur, Punjab.

Relevance of Guru Nanak Dev for Modern India:

- Building an Egalitarian Society: His idea of equality can be deduced by the following innovative social institutions, as given by him:
- Langar: Collective cooking and sharing of food.
- Pangat: Partaking food without distinctions of high and low caste.
- Sangat: Collective decision making.

Social Harmony:

- According to him, the whole world is God's creation and all are born equal. There is only one universal creator i.e. "Ek Onkar Satnam".
- Apart from it, forgiveness, patience, forbearance, and kindness are the core of his teachings.

Creating a Just Society:

- He placed the motto of "kirat karo, naam japo and vand chhako" (work, worship and share) before his disciples.
- He stood for karma as the basis of dharma, and he transformed the idea of spiritualism into the ideology of social responsibility and social change.
- He advocated the concept of "dasvandh" or donating one-tenth of one's earning among needy persons.

Gender Equality:

- According to him, "Women as well as men share the grace of God and are equally responsible for their actions to him."
- Respect for women and gender equality is perhaps the most important lesson to be learnt from his life.

Bringing Peace:

- According to Indian philosophy, a Guru is the one who provides illumination, dispels doubt and shows the right path. In this context, the ideas of Guru Nanak Dev can help promote peace, equality and prosperity across the globe.
- In 2019, the 550th birth anniversary of Guru Nanak Dev was celebrated and the Kartarpur corridor was inaugurated, which is an important step towards easing the tensions between India and Pakistan.

DAILY ANSWER WRITING PRACTICE

Qns “Recent geopolitical developments in India’s neighbourhood, requires a reset in India-Nepal relations.” Critically Analyse the statement in context of India-Nepal- China triangulation. (250 words).

Ans:

Nepal has recently released a new political map that claimed Kalapani, Limpiyadhura and Lipulekh of Uttarakhand as part of Nepal’s territory. Though Kalapani has been a disputed territory between India and Nepal, this cartography assertion by Nepal appears to threaten the special relationship between India and Nepal.

Further, China’s engagement with Nepal, in order to counterbalance the Indian influence in Nepal, has also led to erosion of trust between India and Nepal.

Background of Territorial Dispute:

- The 1816 Treaty of Sugauli concluded between British India and the Kingdom of Nepal, states the Kali River in the Kalapani region demarcates the border between India and Nepal.
- However, in recent times, Nepal has contested that the tributary joining the Mahakali river at Kalapani is not the Kali river. Nepal now contends that the Kali river lies further west to the Lipulekh pass.
- This results in a boundary dispute between India and Nepal.
- There is a similar dispute over Susta region due to change of course by the Gandak river which demarcates the Indo-Nepal border in Champaran(Bihar).
- Series of Diplomatic Tussles: Nepal’s assertion on Kalapani is part of a series of events which reflects a rough patch in India-Nepal ties. Other parts being-
- India’s reservation on Nepal’s new constitution in 2015.
- Virtual blockade of oil supplies from India to Nepal for six months.

China’s Growing Influence:

- In recent times, China has made inroads into Nepal in infrastructure, education and health sectors. Also, Nepal wants to take advantage of China’s BRI project.
- India is worried that China’s chequebook diplomacy would turn Nepal into a client state, which would undermine India’s security interests.
- However, Nepal has asserted that its relationship with China is purely economic and will not be hurting the Indian strategic interests in any way.

Way Forward

- India and Nepal through cooperation could bring growth and prosperity from its people and region. Thus, both countries should make diplomatic efforts to resolve the present crisis.
- Further, India should stop looking at Nepal purely through a security prism, and at bilateral relations only as transactional and part of a zero-sum game with China.
- India should revise its stance on the India-Nepal-China economic corridor.
- The corridor provides a likelihood of greater tourism and people to people contact which is important for bridging the trust deficit that exists today between India and China.
- Nepal should ensure India that any of its development activities will not jeopardise India’s strategic interests.

DAILY QUIZ

1. Which of the following statements about river Brahmaputra is correct?

1. It originates from the Chemayungdung glacier.
2. Its tributaries Tista and Manas confluence on its left bank.

Select the correct answer using the code given below:

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

2. With reference to the Sikhism, consider the following statements:

1. Guru Arjan Dev was the tenth Sikh guru.
2. The Adi Granth was composed by the guru Gobind Singh.
3. Sangat is a congregational worship practice involving collective recitation.

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

3. With reference to Mission COVID Suraksha, consider the following statements:

- 1. It is India's targeted effort to enable the development of indigenous, affordable and accessible vaccines.
- 2. It will be implemented by a Mission Implementation Unit under the Ministry of Health and Family Welfare.

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

4. Consider the following statements about Diabetes:

- 1. In Type-1 Diabetes, the body fails to produce sufficient insulin.
- 2. In Type-2 Diabetes, although the body produces insulin, the cells do not respond to it.
- 3. Type-2 Diabetes is also known as juvenile diabetes as it mostly affects children aged 14-16 years.

Which of the statements given above is/are not correct?

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

5. With reference to Indian Railways, consider the following statements:

- 1. Red Hill Railway was India's first railway.
- 2. Indian Railways was nationalised by the Government of India Act 1935.
- 3. The first electric passenger train ran between Victoria Terminus and Kurla.

Which of the statements given above is/are correct?

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

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VST : TEST CENTRES

BHUBANESWAR, CUTTACK, BERHAMPUR, SAMBALPUR, KOLKATA

Syllabus	No. of Questions
History of Modern India	5
Geography of India	5
General Science	8
Environment & Ecology	7
Indian Constitution	8
Indian Economy	7
Current Affairs	10

TEST PATTERN: OBJECTIVE TYPE OFFLINE TEST

Total Marks	: 100
Total Questions	: 50Q
Time Duration	: 1 Hour
Per Question	: 2 Marks
Negative Marking	: 0.66 Marks

- Ex. Vanik Students refers to those students who were previously enrolled in classroom courses like Banking, SSC, Banking + SSC + Railway, OSSC, ASO, CT/B.Ed batches.
- Scholarship is applicable for IAS, OAS, WBCS long term classroom courses.
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