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**RAPID REVISION SERIES (RRS)**

**500 HIGH PROBABLE  
TOPICS FOR UPSC  
PRELIMS 2020**

**TOPIC 136-150**



**YouTube Initiative**



**IASbaba's**

**Session 10**

**Rapid Revision Series  
of  
500 HIGH PROBABLE TOPICS  
for  
PRELIMS 2020**



# TOPICS TO REVISE

136. National Mission on Quantum Technologies & Applications (NM-QTA)
137. Quantum Technology
138. SYCAMORE
139. IndiGen initiative
140. McrBC and Phages
141. Jal Shakti Abhiyan (JSA)
142. Jal Jeevan Mission (JJM)
143. CoP18 of CITES
144. Smooth-coated otter and Small-clawed otters
145. Indian star tortoise
146. Tokaygecko (Gekko gekko)
147. Wedgefish
148. Indian Rosewood
149. China's Nine-dash line and Kra Canal
150. Reunion Island



# Topic 136: National Mission on Quantum Technologies & Applications (NM-QTA)



केन्द्रीय बजट  
UNION BUDGET 2020

Budget 2020 announced Rs 8,000 crore over the next 5-yr in the National Mission on Quantum technology and its applications

## Key points:

1. Mission to oversee the development of quantum technologies
2. Announced in Budget 2020
3. Period: Five years (2020-25)
4. Total Funds: Rs 8000 crores
5. Implementing Body: Department of Science & Technology (DST)

- The areas of focus for the NM-QTA Mission will be in fundamental science, translation, technology development and towards addressing issues concerning national priorities
- The mission can help prepare next generation skilled manpower, boost translational research and also encourage entrepreneurship and start-up ecosystem development.
- Quantum principles will be used for engineering solutions to extremely complex problems in computing, communications, sensing, chemistry, cryptography, imaging and mechanics



- Their applications which will be boosted include those in aero-space engineering, numerical weather predictions, simulations, securing the communications & financial transactions, cyber security, advanced manufacturing, health, agriculture, education
- It can bring India in the list of few countries with an edge in this emerging field will have a greater advantage in garnering multifold economic growth and dominant leadership role





# Topic 137: Quantum Technology

## Key points:

1. Uses principles of quantum mechanics (physics of sub-atomic particles)
2. Developed in early 20th century - to describe nature in the small — at the scale of atoms and elementary particles
3. Helped to understand - physical world, interaction of light and matter and on subjects such as gravity and black holes
4. Led to inventions such as lasers and semiconductor transistors



## Topic 138: SYCAMORE

**In news:** Google announced its quantum computer – Sycamore

### What is quantum supremacy?

- It describes the point where quantum computers can do things that classical computers cannot.
- In Google's case, researchers claimed to have developed a processor that took 200 seconds to do a calculation that would have taken a classical computer 10,000 years.

### What is a quantum computer?

- Traditional computers work on the basis of the laws of classical physics, specifically by utilising the flow of electricity.
- A quantum computer, on the other hand, seeks to exploit the laws that govern the behaviour of atoms and subatomic particles.
- A classical computer processes information. Bits of information are stored as either 0 or 1.
- In a quantum computer, information is stored in quantum bits, or qubits. And a qubit can be both 0 and 1 at the same time.



# Topic 139: IndiGen initiative

## Key Points:

1. By CSIR in April 2019
2. CSIR had conducted Whole Genome Sequencing of 1,008 Indians
3. Whole genome sequencing - Major driver for biomedical science
4. Faster and efficient diagnosis of rare genetic diseases

## What is Gene Sequencing?

- Sequencing a genome means deciphering the exact order of base pairs in an individual.



# Topic 140: McrBC and Phages

## Key points:

1. It is a complex bacterial protein
2. It helps prevent viral infections in a bacterial cell
3. It functions as a molecular scissor
4. Benefits of determining McrBC's structure
  - 1) Long term implications in phage therapy
  - 2) Combat drug-resistant infections

## Phages:

- They are groups of viruses that infect and kill bacterial cells
- Phage therapy - therapeutic use of bacteriophages to treat bacterial infections
- Phage therapy could be used as an alternative to antibiotics
- Helps combat drug-resistant





# Topic 141: Jal Shakti Abhiyan (JSA)

## Key points:

1. 2019-24 = Spotlight is on water
2. Ministry of Jal Shakti was launched in 2019
3. Within a month of announcing the Ministry of Jal Shakti, JSA was launched

Phase I: 1st July to 15th September 2019 (all States)

Phase II: 1st October to 30th November 2019 (States with retreating monsoon)

## Jal Shakti Abhiyan

- Intensive water conservation campaign
- Built on citizen participation
- Time-bound, mission-mode water conservation campaign
- Officers, groundwater experts and scientists from Gol work to ramp up rainwater harvesting and conservation efforts in 225 water stressed districts
- Jan Andolan



## Topic 142: Jal Jeevan Mission (JJM)

### Key points:

1. Aim - to ensure piped water supply to all rural households by 2024
2. Was also launched in 2019
3. 'Nal Se Jal' scheme - provide potable water at service level of 55 litre per capita per day (lpcd) to every rural household by 2024
4. JJM stresses on service delivery, rather than infrastructure creation
5. Women are empowered and are trained



# Topic 143: CoP18 of CITES

## Key points:

1. Convention on International Trade in Endangered Species on Wild Fauna and Flora (CITES)
2. Also known as the Washington Convention
3. It was drafted as a result of a resolution adopted in 1963 at a meeting of members of IUCN
4. Ensures that international trade in specimens of wild animals and plants does not threaten the survival of the species in the wild

Appendix I	Appendix II	Appendix III
Includes species that are the most endangered or “threatened with extinction”	Includes species which at current are not threatened with extinction but that may become so, unless trade is closely controlled	Species are included to this list at the request of a Party that already regulates trade in the species and that needs the cooperation of other countries to prevent unsustainable or illegal exploitation
Trade in specimens of these species is permitted only in exceptional circumstances.	Trade should not be detrimental to the survival of the species in the wild.	Provides a lower level of protection.
Trade may take place, provided it is authorized by the granting of both an import permit and an export permit	Export permit is required Import permit is not required	International trade is allowed only on presentation of the appropriate permits or certificates

5. India sought boost to protection status of 5 species at CITES (CoP 18)



# Topic 144: Smooth-coated otter and Small-clawed otters

## Key info: Smooth-coated otter

- IUCN Vulnerable
- CITES Appendix I
- Found in India and S.Asia; S-E-Asia
- Habitat: Artificial/Aquatic & Marine, Wetlands (inland), Forest, Grassland, Marine Coastal/Supratidal, Marine Intertidal, Shrubland



## Key info: Small-clawed otters

- IUCN Vulnerable
- CITES Appendix I
- Found in Freshwater wetlands and forests of Himalayas, Western Ghats and Southeast Asia.





# Topic 145: Indian Star Tortoise



## Key info:

- IUCN Vulnerable
- CITES Appendix I
- Found in India (Tamil Nadu, Karnataka, Andhra Pradesh, Orissa)
- Artificial/Terrestrial, Forest, Shrubland, Grassland
- Loss of habitat to agriculture and illegal harvesting





## Topic 146: Tokay gecko (Gekko gekko)

### Key info:

- IUCN Least Concern
- CITES Appendix II
- Schedule III of India's Wildlife Protection Act, 1972
- Found in N E India, China and S-E Asia part
- Habitat: Artificial/Terrestrial, Rain Forests



## Topic 147: Wedgefish

### Key info:

- IUCN Critically Endangered
- CITES Appendix II
- Found in coastal India and Indo-Pacific ocean
- Shallow water coastal species



## Topic 148: Indian Rosewood

### Key info:

- Deciduous rosewood tree
- IUCN Vulnerable and CITES Appendix II
- Native to the Indian subcontinent, also grown in Nigeria, Kenya, Vietnam, the Philippines, and other parts of tropical Africa.
- India has proposed to remove rosewood from Appendix II of CITES.





# Topic 149: China's Nine-dash line

## CHINA'S NINE DASH LINE



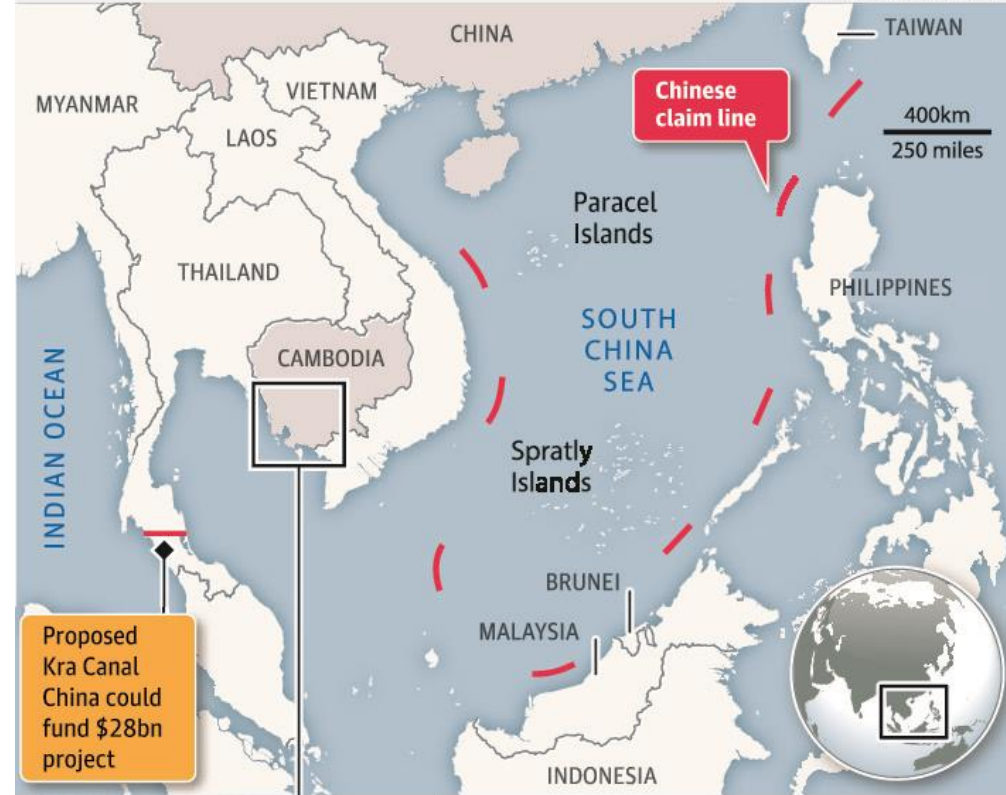
### CLAIMS

— China — Philippines — Malaysia — Brunei — Vietnam

## Spreading **influence**

China and Cambodia have signed a secret agreement that allows Beijing exclusive use of the Ream naval base on the Gulf of Thailand, according to a report

SOURCE: GRAPHIC NEWS



**1** China will get rights to part of the Ream facility, not far from the **Dara Sakor** international airport being built by a Chinese company, according to a *Wall Street Journal* report. Both China and Cambodia have denied the report

**2** China will use the base for 30 years,

with automatic renewals every 10 years after that. China could station military personnel, store weapons and berth warships at the facility

**3** Of the 190 acres, 62 acres will be dedicated to China's use

**4** This will be China's first dedicated naval staging facility in Southeast Asia

**The Ream** installation covers about 190 acres, including two facilities built with U.S. funding and used by the Cambodian navy, and a single pier





## Topic 150: Réunion Island

### Key points:

1. India and France conducted joint patrols from the Réunion Island for the first time
2. Patrol was conducted by a P-8I aircraft with French Navy personnel on board
3. Réunion Island is a French department in the Indian Ocean
4. It is known for its volcanic, rainforested interior, coral reefs and beaches

